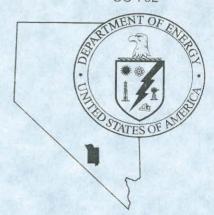


Nevada Environmental Restoration Project DOE/NV--11718-179 UC-702



# Closure Report for CAU No. 416 Project Shoal Area

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Revision: 0

January 1998

Environmental Restoration Division

U.S. Department of Energy Nevada Operations Office

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# CLOSURE REPORT FOR CAU 416: PROJECT SHOAL AREA

Prepared for
U. S. Department of Energy
Nevada Operations Office
Under Contract No. DE-AC08-96NV11718

Controlled Copy No.: UNCONTROLLED

Revision: 0

Prepared by
Bechtel Nevada
Environmental Restoration Program

January 1998

# CLOSURE REPORT FOR CAU 416: PROJECT SHOAL AREA

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Nevada Environmental Restoration Project

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# **ACRONYMS AND ABBREVIATIONS**

AEC U.S. Atomic Energy Commission

CAS Corrective Action Site

CAU Corrective Action Unit

COC Constituent of Concern

CR Closure Report

DOE/NV U.S. Department of Energy, Nevada Operations Office

FFACO Federal Facilities Agreement and Compliance Order

ft feet

ft<sup>2</sup> square feet

gal gallon

in inch

km kilometer

L liter

m meter

m<sup>2</sup> square meter

m<sup>3</sup> cubic meter

mg/kg milligrams per kilogram

mi mile

NDEP Nevada Division of Environmental Protection

NTS Nevada Test Site

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# ACRONYMS AND ABBREVIATIONS (continued)

PSA Project Shoal Area

SAFER Streamlined Approach for Environmental Restoration

TPH Total Petroleum Hydrocarbons

U.S. United States

yd³ cubic yard

# **EXECUTIVE SUMMARY**

This Closure Report provides the documentation for closure of the United States Department of Energy/Nevada Operations Office (DOE/NV) Project Shoal Area (PSA) Surface Corrective Action Unit (CAU) 416. CAU 416 consists of a mud pit (Corrective Action Site [CAS] 57-09-01), muckpile (CAS 57-06-01), and housekeeping site (CAS 57-98-01). The PSA is located approximately 48.3 kilometers (30 miles) southeast of Fallon, Nevada.

The closure of the PSA CAU 416 has been completed in accordance with the Nevada Division of Environmental Protection approved <u>Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area</u> (DOE, 1997a), <u>Record of Technical Change No. 1 For Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area</u> (DOE, 1997b), and <u>Housekeeping Category Corrective Action Unit Workplan</u> (DOE, 1996).

The mud pit was the result of drilling activities at the PSA in 1963. Investigation activities completed in 1996 determined drilling mud in the mud pit was impacted with petroleum hydrocarbons in excess of the State of Nevada 100 milligram per kilogram (mg/kg) Total Petroleum Hydrocarbon (TPH) Action Level (NAC, 1996). The mud pit closure activities consisted of excavation, transportation, and disposal of approximately 184 cubic meters (m³) (240 cubic yards [yd³]) of petroleum hydrocarbon impacted drilling mud and weathered granite, verification sampling and analysis, and regrading of the mud pit area. The impacted materials were disposed of in the Area 6 Hydrocarbon Landfill located at the Nevada Test Site (NTS). The verification samples collected from the bottom of the excavation area indicate the materials exceeding the Action Level were successfully removed.

The muckpile consists of broken granite from emplacement shaft and drift (tunnel) mining activities at the PSA in 1963. Approximately 5,000 m³ (6,535 yd³) of broken granite is stockpiled at the surface in an area of approximately 930 square meters (10,000 square feet). Analytical results of samples collected in weathered granite approximately 274 meters (m) (900 feet [ft]) northeast of the muckpile indicate constituents of concern (COC's) do not exceed regulatory action levels. Geological data from a site report (DRI, 1988) indicates the granite removed from the emplacement shaft and drift is similar in composition from the surface to the maximum depth of the shaft (402 m [1,320 ft]).

The housekeeping site consisted of approximately 20 used, empty, rusted, steel 0.9 liter (1 quart) oil cans. The oil cans were potentially from the site activities in the 1960's based upon the construction material and style of can. The cans were removed from the site and disposed of the Area 23 Landfill located at the NTS.

The DOE/NV requests the Nevada Division of Environmental Protection to issue a Notice of Completion and move the Project Shoal Area Surface CAU 416 (CAS 57-09-01, CAS 57-06-01, and CAS 57-98-01) from Appendix III to Appendix IV of the Federal Facility Agreement and

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Consent Order because the following corrective action activities were completed as proposed:

- The impacted materials exceeding the 100 mg/kg TPH Action Limit were removed and properly disposed of from the mud pit (CAS 57-09-01).
- The process knowledge (analytical results from the weathered granite samples and site geological data) indicates no COC's exceed regulatory levels in the muckpile (CAS 57-06-01).
- The housekeeping site (CAS 57-98-01) was remediated.

# 1.0 INTRODUCTION

The U.S. Department of Energy, Nevada Operations Office (DOE/NV) operates the Nevada Test Site (NTS) and entered into a trilateral agreement with the state of Nevada and the U.S. Defense Special Weapons Agency. The trilateral agreement, which is entitled the Federal Facilities Agreement and Consent Order (FFACO), provides a framework for identifying, characterizing, remediating, and closing DOE/NV environmental sites in Nevada (NDEP, 1996). Two Corrective Action Units (CAUs) are identified for the DOE/NV Project Shoal Area (PSA) in the FFACO (CAU 416 and CAU 447). The PSA Surface is identified as CAU 416, and the PSA Subsurface is identified as CAU 447.

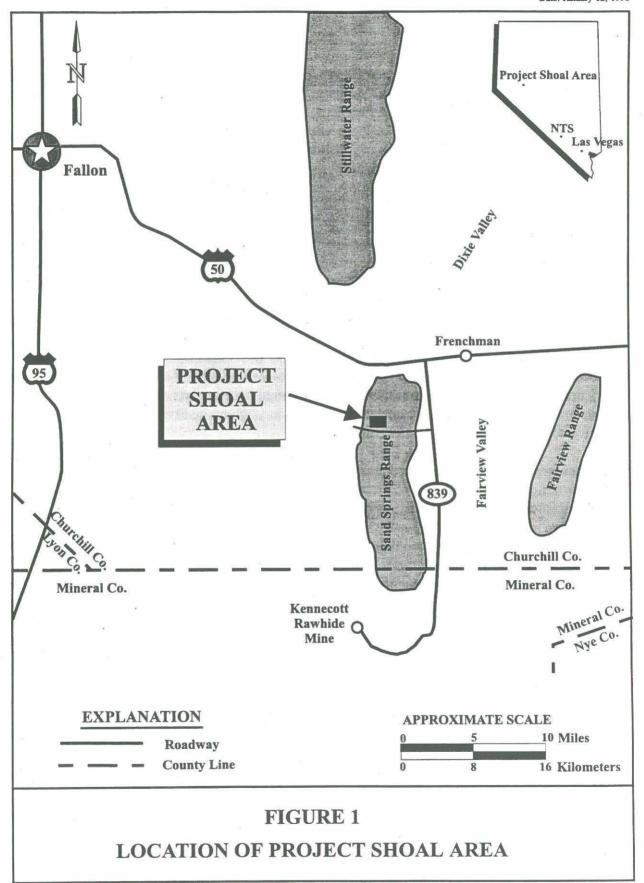
This Closure Report (CR) provides the documentation for the Streamlined Approach for Environmental Restoration (SAFER) closure of the PSA Surface CAU 416. The PSA is located approximately 48.3 kilometers (km) (30 miles [mi]) southeast of Fallon, Nevada, in the Sand Springs Range of Churchill County (see Figure 1). CAU 416 consists of a mud pit (Corrective Action Site [CAS] 57-09-01), muckpile (CAS 57-06-01), and housekeeping site (CAS 57-98-01).

Project Shoal was part of the Vela Uniform Program, a U.S. Department of Defense and U.S. Atomic Energy Commission (AEC) study to evaluate the effects of different geologic media (e.g., granite) on seismic waves produced by underground nuclear tests and to determine whether seismic waves from underground nuclear tests could be differentiated from seismic waves from naturally occurring earthquakes (DRI, 1988).

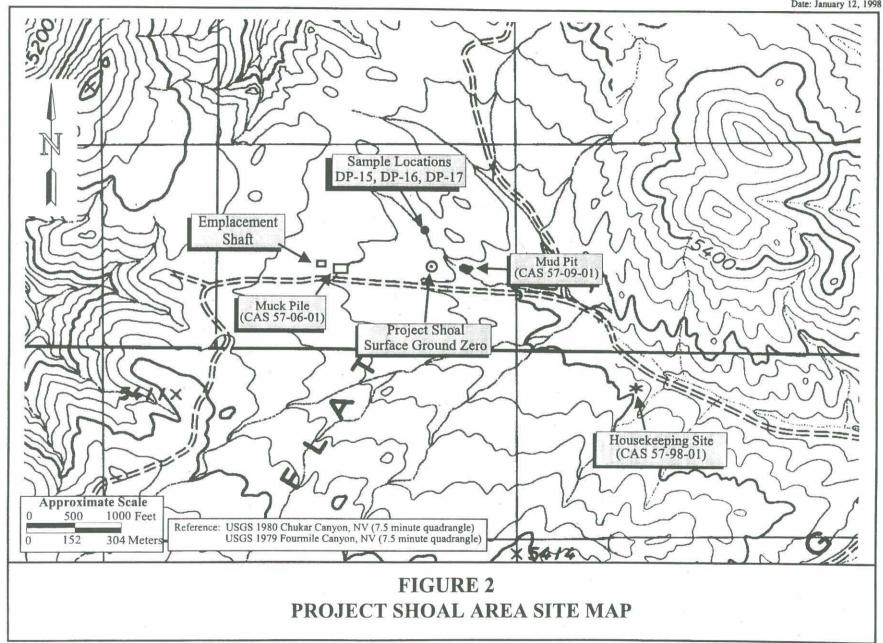
The Shoal event was a 12.5-kiloton device detonated on October 26, 1963. The device was placed in granite 369 meters (m) (1,211 feet [ft]) below the ground surface (DOE, 1997a). Emplacement of the device was accomplished by mining an approximate 3.6 m (12 ft) by 1.8 m (6 ft) shaft to approximately 402 m (1,320 ft). A drift (tunnel) was mined from the shaft approximately 320 m (1,050 ft) to the east (AEC, 1970). The muckpile (CAS 57-06-01) was the result of stockpiling the broken granite from the mining activities associated with the construction of the shaft. The muckpile is located approximately 46 m (150 ft) east of the shaft (see Figure 2). The shaft was permanently closed in 1996 by backfilling with materials from the muckpile. Approximately 2,445 cubic meters (m³) (3,200 cubic yards [yd³]) was used to backfill the shaft. Approximately 5,000 m³ (6,535 yd³) of broken granite remains at the surface in an area of approximately 930 square meters (m²) (10,000 square ft [ft²]).

The mud pit was constructed in a natural drainage area approximately 350 m (1150 ft) east of the emplacement shaft (Figure 2). The mud pit was used to contain drilling effluent and cuttings from the Post Shot Borehole PS-1 in 1963. During drilling activities for Post Shot Borehole PS-1, short-lived gaseous radionuclides (iodine-131, xenon 131m, and xenon-133) were brought to the surface through the drill rig effluent vent-line system (DOE, 1997a). The radionuclides were

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trapped by filters and were subsequently mixed with clean soil and buried in the mud pit (DOE, 1997a). Results from the 1996 characterization activities indicated that no radionuclides were detected above expected values for a granitic terrain; however, Total Petroleum Hydrocarbons (TPH) as diesel and oil were detected above the 100 mg/kg action level (NAC, 1996). The diesel and oil are suspected to have been used in the drilling mud. No other consitituents were detected exceeding regulatory limits (DOE, 1997a).

The housekeeping site is located approximately 701 m (2,300 ft) southeast of the mudpit (Figure 2). The housekeeping site consisted of approximately 20 used, empty, rusted, steel 0.9 liter (1 quart) oil cans. The oil cans were potentially from the site activities in the 1960's based upon the construction material and style of can.

DOE/NV proposed to close the mud pit by excavating and disposing of the TPH impacted materials which exceeded the 100 milligram per kilogram (mg/kg) Action Level (NAC, 1996) in July 1997 (DOE, 1997a). The process knowledge to support closure in-place of the muckpile by no further action was proposed to be added to the SAFER Closure Plan in a Record of Technical Change in September 1997 (DOE, 1997b). Remediation of the housekeeping site using the Housekeeping Site Work Plan (DOE, 1996) with the documentation for closure to be included in the CR was proposed on August 13, 1997 (DOE, 1997c).

The Nevada Division of Environmental Protection (NDEP) approved the proposed activities in the SAFER Closure Plan on August 5, 1997 (NDEP, 1997a). The Record of Technical Change (DOE, 1997b) and proposal to remediate the housekeeping site using the Housekeeping Site Work Plan (DOE, 1996) were recorded as approved on September 19, 1997 (NDEP, 1997b).

The Field closure activities began on August 17, 1997 and were completed on August 27, 1997.

#### 1.1 PURPOSE

The purpose of this CR is to:

- provide the information collected during the closure activities as proposed in the SAFER
   Plan (DOE, 1997a), Record of Technical Change (DOE, 1997b), and Housekeeping Site
   Work Plan (DOE, 1996).
- Obtain a Notice of Completion from the NDEP.
- Recommend the movement of CAU 416 from Appendix III to Appendix IV of the FFACO.

## 1.2 SCOPE

The following remedial actions implemented for the closure of the mud pit (CAS 57-09-01) were:

- Excavated and removed of impacted materials from the mud pit area which exceeded the 100 mg/kg TPH Action Level.
- Conducted verification sampling at the bottom of the excavation in the area of the mud pit to confirm TPH concentrations were below the 100 mg/kg Action Level.
- Transported and disposed of the excavated hydrocarbon impacted materials in the Area 6
  Hydrocarbon Landfill located at the Nevada Test Site (NTS).
- Regraded the mud pit area using soil from the mud pit retention berm.

The scope of work for the muckpile (CAS 57-06-01) was to provide sufficient information to close the muckpile in-place with no further action. Remedial activities for the housekeeping site (CAS 57-98-01) consisted of removal and disposal of the debris (approximately 20 used steel oil cans). Closure activities and justifications for closure of the mud pit, muckpile, and housekeeping site are documented in the following sections and appendices.

## 1.3 CLOSURE REPORT CONTENTS

This CR is divided into the following sections:

- Section 1.0 Introduction: Site background, purpose, scope, and report contents
- Section 2.0 Closure Activities: Corrective action activities, deviations from SAFER Plan as approved, corrective action schedule as completed, and site plan
- Section 3.0 Waste Disposition
- Section 4.0 Closure Verification Results
- Section 5.0 Conclusions
- Section 6.0 References
- Appendix A Laboratory Analytical Results, Granite Samples Near Muckpile
- Appendix B Housekeeping Site Closure Verification Documentation
- · Appendix C Waste Disposal Documentation

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- Appendix D Laboratory Analytical Results, Mud Pit Verification Samples
   This report was developed using information and guidance from the following documents:
- <u>CERCLA Preliminary Assessment of DOE's Nevada Operations Office Nuclear Weapons Testing Areas</u>. Desert Research Institute, 1988.
- Corrective Action Investigation Plan for Project Shoal Area, CAU No. 416, DOE, 1996.
- Housekeeping Category Corrective Action Unit Workplan, Rev. 0, DOE, August 1996.
- Nevada Environmental Restoration Project, Health and Safety Plan, DOE, 1996.
- Nevada Environmental Restoration Project, Industrial Sites, Quality Assurance Project Plan, Nevada Test Site, Revision 1, DOE, 1996.
- Nevada Environmental Restoration Project, Project Management Plan, DOE, 1994.
- Record of Technical Change No. 1 For Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area, Rev. 1, DOE, August 8, 1997.
- Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area, Rev. 1, DOE, July 1997.

# 2.0 CLOSURE ACTIVITIES

This section of the CR details the specific activities involved in the closure of the PSA mud pit (CAS 57-09-01), the process knowledge to support closure in-place of the muckpile (CAS 57-06-01) with no further action, and the remedial activities to close the housekeeping site (CAS 57-98-01). This section also includes the rationale for any deviations from the approved SAFER Plan (DOE, 1997a) and a detailed schedule of site activities as completed.

## 2.1 DESCRIPTION OF CORRECTIVE ACTION ACTIVITIES

#### 2.1.1 Mud Pit

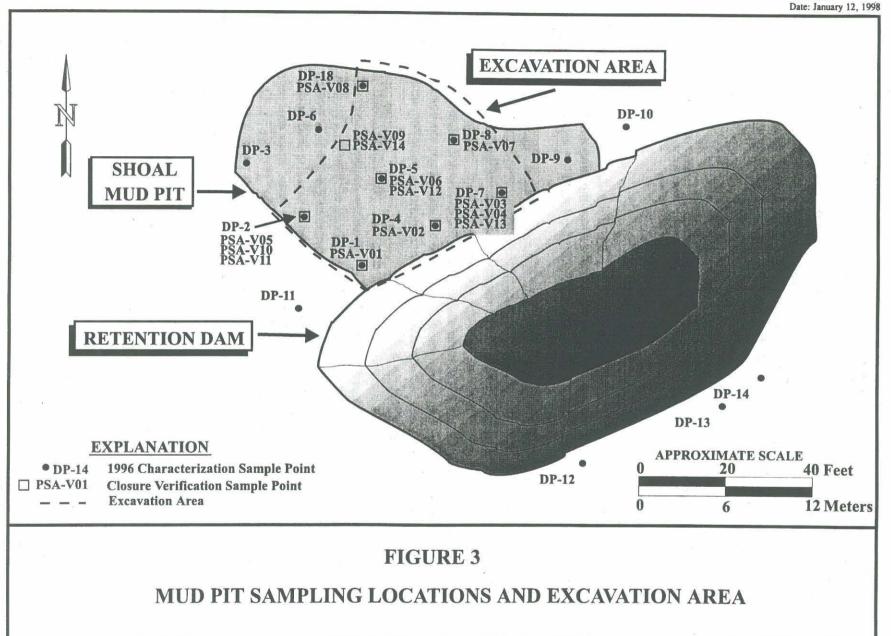
Prior to excavating the hydrocarbon impacted materials in the mud pit, a site clearance for excavation was obtained by reviewing As-Built Engineering Drawings and contacting "Call Before You Dig." Subsurface utilities were not identified in the area of the excavation activities.

All sample location stakes from the 1996 characterization activities were located at the site prior to excavation activities which facilitated demarcation of the excavation area in relation to the 1996 sample points. The soil was excavated to an approximate depth of 0.6 m (2.0 ft) to 0.9 m (3.0 ft) in an approximate area of 250 m² (2,700 ft²) between August 18, 1997 and August 25, 1997. A front end loader was used to excavate and stockpile the excavated material. A backhoe equipped with a bucket without excavating teeth was used to cut and scrape the bottom and edges of the excavation as a waste volume reduction activity. Confirmational sampling activities and analytical results are discussed in Section 4.0.

Two phases of excavation were required to remove the hydrocarbon impacted soils above the 100 mg/kg TPH Action Level. The first phase of excavation consisted of removing approximately 0.6 m (2.0 ft) of hydrocarbon impacted drilling mud and weathered granite followed by verification sampling and analysis. A second phase of excavation was required in the approximate northern one-third to one-half of the excavation area based upon analytical results of samples collected from the base of the excavation on August 19, 1997 (Figure 3). During the second phase of excavation, an additional approximate 0.3 m (1 ft) was removed and placed in the soil stockpile area as described previously.

All excavated soil was stockpiled approximately 30 m (100 ft) south of the mud pit (adjacent to the site access road) on two layers of 10 mil (0.01 inch [in]) plastic. At the end of each excavation day, the excavated soil was covered with 10 mil (0.01 in) plastic and weighted on the edges for stabilization and management purposes.

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The excavation equipment buckets were cleaned after completion of the excavation and loading activities. Site personnel used brooms and hand sprayers containing Alconox<sup>™</sup> and tap water to clean the equipment buckets. Approximately 7.6 liters (L) (2 gallons [gal]) of water was used to clean the equipment. The cleaning activities were conducted over the final end-dump truck loaded with the hydrocarbon impacted soil excavated from the mud pit area. The final end-dump truck contained approximately 15.3 m³ (20 yd³) of impacted soil. For the discussion regarding waste management and disposal, see Section 3.0.

On August 27, 1997, analytical results were received indicating TPH concentrations were below the 100 mg/kg Action Level at all sample locations. Upon receipt of the results, the retention dam located on the south side of the mud pit was removed and used for backfill in the mud pit area. The area was graded as proposed in the SAFER Plan (DOE, 1997a). The area immediately south of the retention dam was regraded to blend with the adjacent topography.

Water for dust suppression activities associated with the excavation and regrading activities was obtained from the City of Fallon through Stockman's Equipment in Fallon, Nevada and the Kennecott Rawhide Mine located approximately 11.3 km (7 mi) south of the site (Figure 1). Approximately 15,140 L (4,000 gal) of water were used at the site. Dust suppression was accomplished through the use of the spray bars and hose on the water truck.

# 2.1.2 Muckpile

The PSA muckpile (CAS 57-06-01) consists of broken granite removed from the subsurface during the mining (construction) of the emplacement shaft and drifts (tunnels) in 1963. The broken granite was placed on the existing sloping topographic surface with a maximum relief from natural grade of approximately 5.5 m (18 ft) on the eastern perimeter. The muckpile tapers to meet natural grade on the western perimeter.

In 1996, approximately 2,445 m³ (3,200 yd³) of the muckpile were used to backfill the emplacement shaft. The emplacement shaft was backfilled because small collapse features were observed in the soil adjacent to the existing concrete cover which could pose a threat to the public, livestock, or wildlife at the site. Approximately 5,000 m³ (6,535 yd³) of broken granite remains at the surface in an area of approximately 930 m² (10,000 ft²). See Figure 2 for locations of the emplacement shaft and muckpile.

No remedial activities were taken at the muckpile in 1997. The following details the justification for no action:

 Process knowledge (DOE, 1997b) indicated that the muck pile was created prior to the testing of any nuclear devices at Project Shoal.

- The post-detonation investigation (drill back) operation was conducted at a distance of approximately 320 m (1,050 ft) east of the site and did not affect the broken rock material that comprises the muckpile (AEC, 1970).
- The emplacement shaft and drifts (tunnels) at Project Shoal were constructed by mining into
  the granitic rocks that comprise the bulk of the Sand Springs Range where the Project Shoal
  site is located. Based on geologic descriptions of cuttings generated during the drilling
  efforts near the emplacement shaft in identical rock types, it was determined that the mineral
  composition of these rocks did not contain metals in greater than background concentrations
  (DOE, 1997b).
- Samples (DP-15, DP-16, and DP-17) were collected from weathered granite equivalents of the muckpile (approximately 274 m [900 ft] northeast of the muckpile and 150 m [500 ft] north of the mud pit) during the September 1996 mud pit characterization activities (see Figure 2 for sample locations). The weathered granite samples were collected to provide analytical data regarding native background concentrations. Sample analytical results are summarized in Table 1 and are provided in Appendix A. The analytical results indicated no COC's were detected in excess of regulatory limits.
- Recontouring/regrading of the existing muckpile would be of minimal benefit as the resulting surface area would be significantly larger, and the existing native vegetation would be significantly impacted.

Considering the process knowledge presented above, DOE/NV recommends that the muckpile be closed in-place with no further action.

# 2.1.3 Housekeeping Site

The housekeeping site consisted of approximately 20 used, empty, rusted, steel 0.9 liter (1 quart) oil cans. The oil cans were probably generated during site activities in the 1960's based upon the construction material and style of can.

Closure activities consisted of removal and disposal of the empty oil cans and preparation of housekeeping documentation (Housekeeping Closure Verification Form in Appendix B). Copies of the photographs of the site before and after the remedial activities were completed and can be found in the Housekeeping Closure Verification Form (Appendix B). The oil cans were removed from the site on August 19, 1997. No discoloration of the soil adjacent to or below the cans was observed during removal activities. The cans were transported to the NTS for disposal on August 27, 1997. The cans were disposed of in the Area 23 Landfill located at the NTS.

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TABLE 1 - SAMPLE ANALYTICAL RESULTS, GRANITE SAMPLES NEAR MUCKPILE

Sample Location	Sample Number	Sample Date	Matrix	Barium mg/kg*	Chromium mg/kg	Gross Alpha pCl/g <sup>b</sup>	Gross Beta pCl/g	Bismuth-214 pCl/g	Cesium-137 pCi/g	Lead-212 pCl/g
DP-15	PSS00022	9/16/96	Soil	104	7.4	23.9	27.1	1.03	0.24 (ND)	1.01
DP-15	PSS00023	9/16/96	Soil	84.2	6.4	25.4	27.3	1.36	0.23 (ND)	0.85
DP-16	PSS00026	9/16/96	Soil	141	10.2	35.9	30.0	0.82	0.23 (ND)	1.04
DP-17	PSS00027	9/16/96	Soil	103	10.2	27.3	25.8	ND°	0.39 (ND)	ND

Sample	Sample	Sample	Matrix	Potassium-40	Lead-214			Thallium-208	Thorium-234	Tritium
Location	Number	Date		pCi/g	pCi/g	pCl/g	pCi/g	pCi/g	pCi/g	pCi/g
DP-15	PSS00022	9/16/96	Soil	23.2	0.95	2.84	1.23	0.36	ND	ND
DP-15	PSS00023	9/16/96	Soil	25.4	0.93	ND	ND	0.42	ND	ND
DP-16	PSS00026	9/16/96	Soil	21.2	0.83	3.43	ND	0.31	1.87	ND
DP-17	PSS00027	9/16/96	Soil	17	ND	ND	ND	0.74	ND	ND

Notes:

<sup>&</sup>lt;sup>a</sup>mg/kg = milligrams per kilogram

<sup>&</sup>lt;sup>b</sup>pCi/g = pico Curies per gram

<sup>&</sup>lt;sup>c</sup>ND = Not detected above laboratory/method limit

### 2.2 DEVIATIONS FROM SAFER PLAN AS APPROVED

No deviations from the approved SAFER Plan (DOE, 1997a) were implemented in the field for the mud pit closure activities.

A Record of Technical Change (DOE, 1997b) was submitted to the NDEP on September 3, 1997, to provide process knowledge in the CR for the closure in place of the muckpile (CAS 57-06-01) by no further action. Additionally, DOE/NV proposed in DOE, 1997c to remediate the housekeeping site (CAS 57-98-01) using the Housekeeping Site Work Plan (DOE, 1996) and provide the documentation in this CR. The Record of Technical Change (DOE, 1997b) and proposal to remediate the housekeeping site were recorded as approved on October 6, 1997 (NDEP, 1997b).

# 2.3 CORRECTIVE ACTION SCHEDULE AS COMPLETED

The project activities were completed as indicated in Figure 4.

The oil cans were removed from the housekeeping site on August 19, 1997. Transportation and disposal of the housekeeping site waste was completed on August 27, 1997.

The mud pit excavation and stockpiling activities were conducted from August 18, 1997 to August 25, 1997. The mud pit waste disposal activities were conducted on August 25 and 26, 1997. The verification samples were collected on August 19 and 25, 1997. Analytical results indicating the impacted materials exceeding the 100 mg/kg TPH action level were removed were received on August 27, 1997. Regrading and demobilization activities were completed on August 27, 1997.

#### 2.4 SITE PLAN/SURVEY PLAT

A site plan reflecting the areas of closure activity addressed in this report is provided as Figure 2. As-Built surveys of the mud pit and muckpile areas were not proposed in the SAFER Plan (DOE, 1997a) or Record of Technical Change (DOE, 1997b) and were not implemented during or after field activities.

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Activity	Activity							FY97											
ID	Description	Start	Finish	15	. 16	17	40	19	nc nc	24	AUG 22		24	9.6	26	27	28	79.	
Project	Shoal Area Surface Closure					**********				883.88		2.4	****	****			***	***	
CAU 41		NAME OF TAXABLE PARTY.	A 4 5 7 10 10 10 10 10 10 10 10 10 10 10 10 10										-						
	Mobilize to site	17AUG97	18AUG97		4	-		7											
20	Excavate mud pit & stockpile materials	18AUG97	18AUG97	-		Z		7											
25	Housekeeping site remediation	18AUG97	18AUG97	+		Z		7											
30	Phase 1 verification sampling	19AUG97	19AUG97	-					7										
40	Phase 1 verification sample analysis	19AUG97	22AUG97	<b>-</b>		*********		-				7							
50	Analytical result receipt/data evaluation	22AUG97	22AUG97	<b>†</b>					*******	Z		7							
60	Excavate mud pit & stockpile materials	25AUG97	25AUG97	<b>-</b>		•••••							7		7				
70	Phase 2 verification sampling	25AUG97	25AUG97	<del> </del>									Z		7				
80	Load & transport 6 loads of soil to NTS	25AUG97	25AUG97	1									. Z		7				
90	Phase 2 verification sample analysis	26AUG97	27AUG97	<b>-</b>								-		7	7	7	,		
100	Load & transport 6 loads of soil to NTS	26AUG97	26AUG97		-/											7			
110	Analytical result receipt/data evaluation	27AUG97	27AUG97	<b>†</b>													,		
120	Remove berm & regrade area	27AUG97	27AUG97	<b>†</b>													,	*****	
125	Transport & dispose of housekeeping waste	27AUG97	27AUG97	<b>†</b>											4		,		
130	Demobilize from site	27AUG97	27AUG97	1											Ż		,		
-																			
ect Start ect Finish e Date	11AJG97 07SEP97 08SEP97 06JAN98     Critical Activity		Figure 4 Corrective Action As Comple	Schedu	ule						Sheet 1 of 1								

# 3.0 WASTE DISPOSITION

# 3.1 WASTE MANAGEMENT ACTIVITIES

The excavated soil from the mud pit was stockpiled on and covered with plastic approximately 30 m (100 ft) south of the mud pit and adjacent to the site access road. The soil was stockpiled on two layers of 10 mil (0.01 in) plastic, covered with 10 mil (0.01 in) plastic, and weighted on the edges for stabilization and management purposes. Excavation and stockpiling activities were conducted from August 18, 1997 to August 25, 1997.

Approximately 7.6 L (2 gal) of rinsate were generated from cleaning the excavation equipment buckets on August 26, 1997. The excavation equipment was cleaned with brooms and a light spray of Alconox<sup>TM</sup> and tap water from a hand sprayer. The cleaning activities were conducted over the final end-dump truck loaded with the last hydrocarbon impacted soil excavated from the mud pit area. The final end-dump truck contained approximately 15.3 m³ (20 yd³) of impacted soil and the plastic used to underlay and cover the excavated soil stockpile.

To eliminate the cleaning of the end-dump trucks (and the generation of additional equipment rinsate), 10 mil (0.01 in) plastic was placed in each end dump truck prior to loading with soil. The trucks were also covered with a tarpaulin to comply with U.S. Department of Transportation regulations and requirements prior to transportation of the soil from the site to the Area 6 Hydrocarbon Landfill located at the NTS.

The used oil cans from the housekeeping site were removed from the site, placed in a plastic bag, and stored in a site vehicle on August 19, 1997. The housekeeping waste was transported to the NTS on August 27, 1997.

# 3.2 WASTE DISPOSAL

Mud pit waste disposal activities were conducted on August 25 and 26, 1997. Twelve approximately 15.3 m³ (20 yd³) loads of hydrocarbon impacted materials (drill cuttings, soil, weathered granite, and the plastic used to underlay and cover the soil stockpile) were disposed in the Area 6 Hydrocarbon Landfill located at the NTS. The total weight of material transported from the mud pit and disposed of in the Area 6 Hydrocarbon Landfill was approximately 294,800 kilograms (649,922 pounds). Copies of the Bills of Ladings, Weight Tickets, and Material Clearances (radiological green tags) required for disposal at the Area 6 Hydrocarbon Landfill can be found in Appendix C.

The used oil cans from the housekeeping site were disposed of in the NTS Area 23 Landfill on August 27, 1997. A copy of the Housekeeping Closure Verification Form and Material Clearance (radiological green tag) can be found in Appendix B.

# 4.0 CLOSURE VERIFICATION RESULTS

Closure verification results are applicable for the mud pit and housekeeping site. The process knowledge (analytical results of granite samples collected near the muckpile and site geological data) for the closure of the muckpile is presented in Section 2.1.3. Two phases of excavation and verification sampling activities were required to remove the hydrocarbon impacted drilling mud and weathered granite from the mud pit area.

### 4.1 MUD PIT

# 4.1.1 First Phase Of Verification Sampling/Analysis

After removal of the hydrocarbon contaminated material from the mud pit, nine samples were collected from the bottom of the excavation area at eight sample points. Two samples were collected at the same location (Sample PSA-V04 is a field duplicate of Sample PSA-V03). The eight sample points were collected at the approximate locations of the 1996 direct-push characterization samples that exceeded the 100 mg/kg Action Level (DOE, 1997a). See Figure 3 for the locations of the 1996 characterization sample points and the verification sample points.

The verification samples were collected on August 19, 1997, from the exposed surface in the excavated area in accordance with the SAFER Plan (DOE, 1997a). Samples were collected using clean stainless-steel trowels. The samples were placed in 250 milliliter (8 ounce) glass jars, sealed, labeled, and stored in an ice-filled cooler pending delivery to the analytical laboratory. The samples were hand-carried to NEL Laboratories in Reno, Nevada, to be analyzed for TPH by method SW 846-8015 Modified. A 24-hour turn-around on the analyses was requested; however, problems with the laboratory equipment resulted in a 48-hour turn-around. The results were received and evaluated on August 22, 1997.

Analytical results are summarized in Table 2 and are provided in Appendix D. TPH concentrations for the nine verification samples ranged from below 15 mg/kg to 170 mg/kg. Five samples (PSA-V03, PSA-V04 [field duplicate of PSA-V03], PSA-V05, PSA-V06, and PSA-V09) exceeded the action level of 100 mg/kg. Results for these samples ranged from 110 mg/kg to 170 mg/kg TPH. The location of the samples exceeding the 100 mg/kg action level was confined to the approximate northern half of the excavation area (Figure 3).

# 4.1.2 Second Phase Of Verification Sampling/Analysis

The second phase of excavation activities was initiated in the approximate northern half of the excavation area on August 25, 1997, after receipt and evaluation of the results indicating the 100 mg/kg TPH action level was exceeded. Approximately 0.3 m (1 ft) of additional material

TABLE 2 - SAMPLE ANALYTICAL RESULTS, FIRST PHASE OF **VERIFICATION SAMPLES** 

SAMPLE	DIRECT PUSH	TPH RES	CRDL <sup>3</sup>	
NUMBER	LOCATION	DIESEL <sup>1</sup>	OIL <sup>2</sup>	(mg/kg)
PSA-V01	DP-1	21	53	15
PSA-V02	DP-4	ND <sup>4</sup>	ND	. 15
PSA-V03	DP-7	62	120	15
PSA-V04 (duplicate of PSA-V03)	DP-7	38	130	15
PSA-V05	DP-2	44	170	15
PSA-V06	DP-5	51	130	15
PSA-V07	DP-8	33	92	15
PSA-V08	DP-18	ND	ND	15
PSA-V09 <sup>5</sup>	DP-6	48	110	15

#### Notes:

 $<sup>^{1}</sup>$  Diesel and fuel oil are  $C_{10-24}$  range hydrocarbons  $^{2}$  Waste and lubricating are >  $C_{24}$  range hydrocarbons

<sup>&</sup>lt;sup>3</sup> Contract-Required Detection Limit

<sup>&</sup>lt;sup>4</sup>ND= Not detected above the laboratory/method limits

<sup>&</sup>lt;sup>5</sup> Sample PSA-V09 collected approximately 3 meters (10 feet) southeast of DP-6

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was removed from the northern portion of the excavation area encompassed by sample points PSA-V03, PSA-V04 (field duplicate of PSA-V03), PSA-V05, PSA-V06, and PSA-V09.

Following removal of the additional material, the sample locations which exceeded the 100 mg/kg TPH action level were resampled. The sample locations can be found in Figure 3. Five additional verification samples (PSA-V10, PSA-V11 [field duplicate of PSA-V10], PSA-V12, PSA-V13, and PSA-V14) were collected in the same manner as described in Section 4.1. The samples were hand-carried to NEL Laboratories in Reno, Nevada, for analysis on August 25, 1997. The analytical results were received on August 27, 1997.

The analytical results are summarized in Table 3 and are provided in Appendix B. TPH concentrations for the five samples were below 15 mg/kg.

The results of the analyses confirmed that the excavation of the additional material was successful in removing materials in the mud pit that exceeded the 100 mg/kg TPH action level, and that no further excavation was necessary.

## 4.2 HOUSEKEEPING SITE

Verification results of the remediation activities consisted of taking photographs of the site before and after removal of the oil cans and preparation of the Housekeeping Closure Verification Form. Copies of the photographs are provided in the Housekeeping Closure Verification Form located in Appendix B.

TABLE 3 - SAMPLE ANALYTICAL RESULTS, SECOND PHASE OF **VERIFICATION SAMPLES** 

SAMPLE	DIRECT PUSH	TPH RES	CRDL <sup>3</sup>		
NUMBER	LOCATION	DIESEL¹	OIL <sup>2</sup>	(mg/kg)	
PSA-V10	DP-2	ND <sup>4</sup>	ND .	15	
PSA-V11 (duplicate of PSA-V10)	DP-2	ND	ND	15	
PSA-V12	DP-5	ND	ND	15	
PSA-V13	DP-7	ND	ND	15	
PSA-V14 <sup>5</sup>	DP-6	ND	ND	15	

# Notes:

 $<sup>^1</sup>$  Diesel and fuel oil are  $C_{10-24}$  range hydrocarbons  $^2$  Waste and lubricating are >  $C_{24}$  range hydrocarbons  $^3$  Contract-Required Detection Limit

<sup>&</sup>lt;sup>4</sup>ND= Not Detected above the laboratory/method limits

<sup>&</sup>lt;sup>5</sup> Sample PSA-V14 collected approximately 3 meters (10 feet) southeast of DP-6

# 5.0 CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 CONCLUSIONS

The closure of the PSA mud pit (CAS 57-09-01) was completed in accordance with the approved Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area (DOE, 1997a) by excavation and disposal of the hydrocarbon impacted materials exceeding the 100 mg/kg TPH action level. The mud pit excavation area was backfilled, and the area was regraded using the clean soils from the retention berm.

The process knowledge was provided to substantiate the petition for closure in-place of the PSA muckpile (CAS 57-06-01) as proposed in the Record of Technical Change No. 1 For Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area (DOE, 1997b). The process knowledge regarding the composition of the muckpile indicates that no COC's exceed regulatory action levels.

The housekeeping site was remediated in accordance with the approved the Housekeeping Site Work Plan (DOE, 1996) by removal and disposal of the debris and preparation of the Housekeeping Closure Verification Form.

#### 5.2 RECOMMENDATIONS

The DOE/NV provides the following recommendations since the closure activities were completed as proposed:

- A Notice of Completion be provided by the NDEP to DOE/NV for the closure of the three CASs in CAU 416 (PSA mud pit [CAS 57-09-01], muckpile [CAS 57-06-01], and housekeeping site [CAS 57-98-01]).
- CAU 416 be moved from Appendix III to Appendix IV of the FFACO.

# 6.0 REFERENCES

U.S. Atomic Energy Commission, see AEC

AEC, Nevada Operations Office, 1970. <u>Site Disposal Report, Fallon Nuclear Test Site (Shoal)</u>, <u>Churchill County</u>, <u>Nevada</u>, NVO-73.

U.S. Department of Energy, see DOE

DOE, 1996. <u>Housekeeping Category Corrective Action Unit Work Plan</u>, Rev. 0, August 1996, DOE/NV-452, UC-700.

DOE, 1997a. Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area, Rev. 1, July 1997, DOE/NV-479, UC-700.

DOE, 1997b. Record of Technical Change No. 1 For Streamlined Approach For Environmental Restoration Plan For Corrective Action Unit 416, Mud Pit, Project Shoal Area, Rev. 1, July 1997, DOE/NV-479, UC-700, August 8, 1997.

DOE, 1997c. <u>DOE Proposed Modifications to FFACO Appendices</u>, Fourth Quarter FY 1997, Attachment IV of the Agenda Packet distributed at the FFACO meeting on August 13, 1997.

Desert Research Institute, see DRI

DRI, 1988. <u>CERCLA Preliminary Assessment of DOE's Nevada Operations Office Nuclear Weapons Testing Areas</u>. Las Vegas, NV.

Nevada Administrative Code, see NAC

NAC, 1996. State of Nevada Administrative Code 459.9921 through 459.999 <u>Storage Tanks</u> and 445A.347 <u>Notification of Release of Pollutant</u>.

Nevada Division of Environmental Protection, see NDEP

NDEP, 1996. The State of Nevada Department of Conservation and Natural Resources, Division of Environmental Protection and the U. S. Department of Energy and the U. S. Department of Defense Federal Facility Compliance Order And Agreement.

NDEP, 1997a. Letter from Paul J. Liebendorfer to Stephen A. Mellington, <u>RE: SAFER For CAS 57-09-01</u>, Shoal Surface Mud Pit, August 5, 1997.

NDEP, 1997b. Letter from Paul J. Liebendorfer to Stephen A. Mellington, <u>RE: CAU/CAS Movements Proposed at the FFACO Quarterly Meeting of 08/13/97</u>, September 19, 1997.

# APPENDIX A

# LABORATORY ANALYTICAL RESULTS GRANITE SAMPLES NEAR MUCKPILE



Quanterra Incorporated 13715 Rider Trail North Earth City, Missouri 63045

314 298-8566 Telephone 314 298-8757 Fax

## CERTIFICATE OF ANALYSIS

IT Las Vegas 4330 South Valley View Suite 114 Las Vegas, NV 89103-4047

October 13, 1996

Attention: Mr. Kurt Schmidt

IT Las Vegas Project Number

Quanterra, St. Louis Project Number

SDG Number

Date Received

Number of Samples

Sample type

: Project Shoal

: 317.55

: 12173

September 17, 1996

: Twenty-six (26)

: Water and Soil

# INTRODUCTION

The following samples from the Nevada Test Site were received at Quanterra, St. Louis for TCLP Volatiles, TCLP Semi-Volatiles, TCLP Metals, Total Barium, Chromium, Gamma, Rad-Screen Tritium, Total Petroleum Hydrocarbon (Diesel and Gasoline), and Gross Alpha/Beta.

Reviewed and Approved

Allen M. Field

Quanterra Project Manager



PAGE 2 of 4 October 13, 1996

IT Las Vegas Project Number

: Project Shoal

QUANTERRA

Quanterra, St. Louis Project Number

: 317.55

The samples were labeled as follows:

CLIENT ID	LAB ID	Matrix
PSS00001	12173-001	Soil
PSS00002	12173-002	Soil
PSS00008	12173-003	Soil
PSS00009	12173-004	Soil
PSS00014	12173-005	Soil
PSS00024	12173-006	Soil
PSS00016	12173-007	Soil
PSS00011	12173-008	Soil
PSS00007	12173-009	Soil
PSS00013	12173-010	Soil
PSS00028	12173-011	Soil
PSS00029	12173-012	Soil
PSS00022	12173-013,DUP,MS	Soil
PSS00023	12173-014	Soil
PS\$00026	12173-015	Soil
PSS00027	12173-016	Soil
PSS00019	12173-017	Soil
PSS00020	12173-018	Soil
PSS00021	12173-019	Soil
PSS00010	12173-020,DUP,MS,MSD	Soil
PSS00005	12173-021	Soil
PSS00006	12173-022	Soil
PST00003	12173-023	Water
PSS00030	12173-024	Water
PSS00031	12173-025	Water
PST00004	12173-026	Water

#### ANALYTICAL RESULTS/METHODOLOGY

The analytical results are presented in the enclosed Certificate of Analysis and EDD Disk. This report includes information on client identification numbers, lab identification numbers, preparation date, analysis date, results, units, and results for quality control samples.

The following table is a list of the analyses requested and the methods used for the above samples:



PAGE 3 of 4 October 13, 1996

IT Las Vegas Project Number

: Project Shoal

QUANTERRA

Quanterra, St. Louis Project Number

317.55

Method Analysis

Barium, Chromium

EPA 6010

TCLP Metals

EPA 1311/7470/6010

Gamma Scan

EPA 901.1

Tritium

EERF H.01 EPA 8015

TPH (Diesel and Oil) Gross Alpha/Beta

EPA 900.0

**TCLP** Volatiles

EPA 1311/8240

TCLP Semivolatiles

EPA 1311/8270

### **OUALITY CONTROL**

Method blanks and laboratory control samples were analyzed with the samples listed above for each parameter. Duplicates, matrix spike and matrix spike duplicate were performed as indicated above and as requested by the client.

# **NONCONFORMANCE**

#### Metals

The was a nonconformance associated with SDG 12173. The digestion batch for waters of which sample PSS00030 (12173-024) was associated was digested containing 21 analytical samples, one more than the twenty sample limit. Do to a QC requirement of another sample within the batch two laboratory control samples were also analyzed, within the batch.

#### **COMMENTS**

Login 12173 was received at a temperature of 2/2/2°C.

## **Analytical Notes**

#### Metals

The relative percent difference for chromium in sample PSS00022 (12173-013) was 25.1% and above the 20% limit. The associated data was flagged with an asterisk.



PAGE 4 of 4

October 13, 1996

IT Las Vegas Project Number

: Project Shoal

Quanterra, St. Louis Project Number

: 317.55

# **OUALIFIERS/DEFINITIONS**

\* Values outside of QC limits.

B : Results were between the PQL and the IDL.

U : Results are less than the IDL.

J : An estimated value.

ND : Parameter was analyzed for but not detected.

UG/L : Micrograms per Liter.

MG/L : Milligrams per Liter.

pCi/L : Picocurries per liter.

NA : Not applicable.

%REC : Percent Recovery.

DUP : Duplicate.

QCBLK : Laboratory Method Blank.
QCLCS : Laboratory Control Sample.

Qual. : Qualifier.

LCL : Lower Control Limits.
UCL : Upper Control Limits.

PQL : Practical Quantitation Limit.

MDA : Minimum Detectable Activity.

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Project: 317.55

Category: ICAP Metals Method: EPA 6010 Matrix: Soil

Client ID: PSS00022

Sample Date : 09/16/96 Receipt Date : 09/17/96 Report Date : 10/19/96

Quanterra ID : 12173-013

Annual Manager		Blank Sample	Prep.	Analyses	Result	M - 11-00-70-21-42-		Detection		
Analyte	CAS Number	Name	Date	Date Date			Qual.	Limit	Dilution	
Barium	7440-39-3	QCBLK115574-1	10/04/96	10/04/96	104	mg/kg		20.0	1	
Chromium	7440-47-3	QCBLK115574-1	10/04/96	10/04/96	7.4	mg/kg		1.0	1	

Project: 317.55

Category: ICAP Metals Method: EPA 6010 Matrix: Soil

Client ID: PSS00022DUP

Sample Date : 09/16/96 Receipt Date : 09/17/96 Report Date : 10/19/96

Quanterra ID : 12173-0130

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result Unit Qual.	Detection Limit	Dilution
Barium Chromium	7440-39-3 7440-47-3	QCBLK115574-1 QCBLK115574-1	10/04/96 10/04/96	10/04/96 10/04/96	93.3 mg/kg 5.8 mg/kg	20.0	1

Project: 317.55

Category: ICAP Metals Method: EPA 6010 Matrix: Soil Sample Date : 09/16/96 Receipt Date : 09/17/96 Report Date : 10/19/96

Client ID: PSS00022MS

Quanterra ID : 12173-013MS

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK115574-1	10/04/96	10/04/96	91	%REC			1
Chromium	7440-47-3	QCBLK115574-1	10/04/96	10/04/96	90	%REC			1

Project: 317.55

Category: ICAP Metals Method: EPA 6010 Matrix: Soil

Sample Date : 09/16/96 Receipt Date : 09/17/96 Report Date : 10/19/96

Quanterra ID : 12173-014

Client ID: PSS00023

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Resul t	Unit	Qual.	Detection Limit	Dilution
Barium	7440-39-3	QCBLK115574-1	10/04/96	10/04/96	84.2	mg/kg		20.0	1
Chromium	7440-47-3	QCBLK115574-1	10/04/96	10/04/96	6.4	mg/kg		1.0	1

Project: 317.55

Category: ICAP Metals Method: EPA 6010 Matrix: Soil Sample Date : 09/16/96 Receipt Date : 09/17/96 Report Date : 10/19/96

Client ID: PSS00026

Quanterra ID : 12173-015

		Blank Sample	Prep.	Analyses		11-74		Detection	
Analyte	CAS Number	Name	Date	Date	Result	unit	Qual.	Limit	Dilution
Barium	7440-39-3	QCBLK115574-1	10/04/96	10/04/96	141	mg/kg		20.0	1
Chromium	7440-47-3	QCBLK115574-1	10/04/96	10/04/96	10.2	mg/kg		1.0	1

Project: 317.55

Category: ICAP Metals Method: EPA 6010 Matrix: Soil roject: 317.33

Client ID: PSS00027

Sample Date : 09/16/96 Receipt Date : 09/17/96 Report Date : 10/19/96

Quanterra ID : 12173-016

Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	t Unit Qua	Detection Limit	Dilution
Barium Chromium	7440-39-3 7440-47-3	QCBLK115574-1 QCBLK115574-1	10/04/96 10/04/96	10/04/96 10/04/96	103 10.2	mg/kg mg/kg	20.0	1

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Project: 317.55

Category: GAMMA SCAN Method: EPA 901.1

									Hetilou.	EFR 701.1	
Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Prep Date	Date Analyzed	Parameter	Result	Sigma Error (+/-)	MDA	Units
PSS00007	12173-009	Soil	09/15/96	09/17/96	09/23/96	09/26/96	Thallium-208	0.72	0.21	0.23	pCi/g
			3				Lead-214	0.80	0.50	0.34	pCi/g
PSS00013	12173-010	Soil	09/15/96	09/17/96	09/23/96	09/26/96	Cesium-137	0.25		0.25	pCi/g
							Potassium-40	23.8	4.8	2.5	pCi/g
							Radium-226	3.75	2.53	2.28	pCi/g
							Radium-228	1.53	0.55	0.79	pCi/g
							Lead-212	1.11	0.20	0.19	pCi/g
							Thallium-208	0.44	0.21	0.22	pCi/g
							Lead-214	0.83	0.25	0.28	pCi/g
PSS00028	12173-011	Soil	09/15/96	09/17/96	09/23/96	09/26/96	Cesium-137	0.46		0.46	pCi/g
	a						Potassium-40	17.1	4.8	3.5	pCi/g
							Thallium-208	1.06	0.34	0.38	pCi/g
							Lead-214	1.75	0.83	0.61	pCi/g
PSS00029	12173-012	Soil	09/15/96	09/17/96	09/23/96	09/26/96	Cesium-137	0.24		0.24	pCi/g
							Potassium-40	18.7	4.4	2.1	pCi/g
							Lead-212	1.17	0.41	0.28	pCi/g
							Thallium-208	0.37	0.16	0.22	pCi/g
							Lead-214	0.91	0.59	0.36	pCi/g
PSS00022	12173-013	Soil	09/16/96	09/17/96	09/23/96	09/26/96	Cesium-137	0.24		0.24	pCi/g
							Potassium-40	23.2	4.5	2.7	pCi/g
							Radium-226	2.84	2.09	2.63	pCi/g
							Radium-228	1.23	0.43	0.81	pCi/g
							Lead-212	1.01	0.19	0.19	pCi/g

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Project: 317.55

Category: GAMMA SCAN Method: EPA 901.1

I C. SHEWES-SPEED OF BRIDESE									method:	EPA 901.1	
Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Prep Date	Date Analyzed	Parameter	Result	Sigma Error (+/-)	MDA	Units
PSS00022	12173-013	Soil	09/16/96	09/17/96	09/23/96	09/26/96	Thallium-208	0.36	0.17	0.24	pCi/g
							Bismuth 214	1.03	0.34	0.35	pCi/g
							Lead-214	0.95	0.26	0.27	pCi/g
PSS00022DUP	12173-013DUP	Soil	09/16/96	09/17/96	09/23/96	09/26/96	Cesium-137	0.19		0.19	pCi/g
							Potassium-40	26.9	4.8	2.1	pCi/g
							Radium-228	1.69	0.57	0.68	pCi/g
			<b>30</b>				Lead-212	1.05	0.25	0.23	pCi/g
	<u></u>						Thallium-208	0.61	0.21	0.18	pCi/g
							Lead-214	1.05	0.30	0.32	pCi/g
PSS00023	12173-014	Soil	09/16/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.23		0.23	pCi/g
							Potassium-40	25.4	4.8	1.8	pCi/g
							Lead-212	0.85	0.38	0.32	pCi/g
							That lium-208	0.42	0.17	0.16	pCi/g
							Bismuth 214	1.36	0.36	0.32	pCi/g
							Lead-214	0.93	0.28	0.32	pCi/g
PSS00026	12173-015	Soil	09/16/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.23	***	0.23	pCi/g
							Potassium-40	21.2	4.1	2.1	pCi/g
							Radium-226	3.43	2.73	2.72	pCi/g
							Thorium-234	1.87	1.06	1.40	pCi/g
							Lead-212	1.04	0.22	0.21	pCi/g
							Thallium-208	0.31	0.17	0.22	pCi/g
							Bismuth 214	0.82	0.34	0.33	pCi/g
							Lead-214	0.83	0.26	0.31	pCi/g

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Project: 317.55

Category: GAMMA SCAN Method: EPA 901.1

Client ID	Laboratory ID	Matrix	Date- Sampled	Date Received	Prep Date	Date Analyzed	Parameter	Result	Sigma Error (+/-)	MDA	Units
PSS00027	12173-016	Soil	09/16/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.39		0.39	pCi/g
							Potassium-40	17.0	5.5	3.9	pCi/g
							Thallium-208	0.74	0.30	0.33	pCi/g
PSS00019	12173-017	Soil	09/16/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.25	***	0.25	pCi/g
							Potassium-40	24.8	4.6	2.4	pCi/g
							Radium-226	5.78	4.13	3.37	pCi/g
							Lead-212	1.12	0.36	0.31	pCi/g
							Thallium-208	0.36	0.21	0.30	pCi/g
							Lead-214	1.03	0.41	0.40	pCi/g
PSS00020	12173-018	Soil	09/16/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.20		0.20	pCi/g
							Potassium-40	27.7	5.0	2.1	pCi/g
							Radium-228	1.76	0.68	0.80	pCi/g
							Lead-212	1.34	0.22	0.19	pCi/g
							Thallium-208	0.57	0.21	0.20	pCi/g
							Bismuth 214	1.26	0.42	0.40	pCi/g
			k				Lead-214	1.12	0.32	0.28	pCi/g
PSS00021	12173-019	Soil	09/16/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.24	***	0.24	pCi/g
							Potassium-40	20.7	4.0	1.8	pCi/g
							Lead-212	2.04	0.39	0.27	pCi/g
							Thallium-208	0.39	0.23	0.16	pCi/g
							Bismuth 214	1.33	0.36	0.38	pCi/g
							Lead-214	1.11	0.32	0.36	pCi/g
PSS00010	12173-020	soil	09/15/96	09/17/96	09/23/96	10/07/96	Cesium-137	0.22		0.22	pCi/g

IT-Las Vegas 4330 S Valley View Suite 114 Las Vegas, NV 89103

Project: 317.55

Category: Gross Alpha/Beta Method: EPA 900.0

									Hetilou.	EFA 900.0	
Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Prep Date	Date Analyzed	Parameter	Result	Sigma Error (+/-)	MDA	Units
PSS00022	12173-013	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	23.9	3.5	1.8	pCi/g
							Gross Beta	27.1	3.0	1.8	pCi/g
PSS00022DUP	12173-013DUP	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	25.3	3.6	1.7	pCi/g
					8		Gross Beta	25.1	2.8	1.7	pCi/g
PSS00023	12173-014	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	25.4	3.7	2.0	pCi/g
							Gross Beta	27.3	3.0	1.7	pCi/g
PSS00026	12173-015	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	35.9	4.7	1.8	pCi/g
							Gross Beta	30.0	3.3	1.6	pCi/g
PSS00027	12173-016	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	27.3	3.9	2.3	pCi/g
							Gross Beta	25.8	2.9	1.8	pCi/g
PSS00019	12173-017	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	19.6	3.1	1.9	pCi/g
							Gross Beta	24.2	2.8	1.8	pCi/g
PSS00020	12173-018	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	40.6	5.1	1.8	pCi/g
	ĕ					-	Gross Beta	57.9	6.0	1.7	pCi/g
PSS00021	12173-019	Soil	09/16/96	09/17/96	09/26/96	10/02/96	Gross Alpha	53.9	6.5	1.9	pCi/g
				100 100			Gross Beta	37.7	4.0	1.8	pCi/g
PSS00010	12173-020	Soil	09/15/96	09/17/96	09/23/96	09/26/96	Gross Alpha	27.7	3.9	1.9	pCi/g
							Gross Beta	18.5	2.2	1.7	pCi/g
PSS00010DUP	12173-020DUP	Soil	09/15/96	09/17/96	09/23/96	09/26/96	Gross Alpha	24.0	3.8	2.6	pCi/g
							Gross Beta	15.6	2.0	1.9	pCi/g
PSS00005	12173-021	Soil	09/15/96	09/17/96	09/26/96	10/02/96	Gross Alpha	10.6	2.9	3.5	pCi/g
							Gross Beta	22.3	2.6	1.6	pCi/g
PSS00006	12173-022	Soil	09/15/96	09/17/96	09/26/96	10/02/96	Gross Alpha	21.0	3.4	2.4	pCi/g



## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD\*

Reference Document No. 519801 Page 1 of 2

Project Name/	IT Come	ration									
	ers anucdra Schmid	14. Wohler	Lab De	stination		eanterra		4330 5 Vall	ey V1 AD#114		
Profit Center I	2		Lab	Contact	9 All	en Field			89103		
Project Mana	The second secon	y Proje	ect Contact	t/Phone	13chmi	dr/4-1743 Rep	ort to:10	Syl Hersh			
	Purchase Urder No. 97621 Carrier/Waybill No. 1426 Ex 8718056874										
Required Report D		SAME AS	DILL 10								
Sample <sup>14</sup> Number	Sample <sup>15</sup> Description/Type	Date/Time 16 Collected	Container <sup>17</sup> Type	Sample <sup>18</sup> Volume	Pre- <sup>19</sup> servative	Requested Testin Program	20	Condition on 21	Disposal <sup>22</sup> . Record No.		
P3500022	50il	9-16-940845	Amber	ZVBOZ	Ice	GrowAlB Ba,	7-X-16	1	W 1/2		
P3500022	1	-	1	2×1602		Goma HAGL		FUR L	AB		
P5500023	Soil	716-961000	Amber	80		FOSSAIB Ba C	5 0	hae n			
P5500023	1		1	TOUZ		ramma- HASL	300				
F400026	Soil	9-16-96, 0930	1 nber	802		Gross AlB Ba	CF 18	IO EOD	AD gara mile		
P500026		1	1	1602		Gamma-HASL	300	USE O			
P5500027	Soi )	1-14-11-10950	Amber	802		G1755AB Ba. C	2- 19	" वि			
P5500027	<u> </u>		<u> </u>	laoz	1	Gamma HASL	300	72			
Special Instruction	ns: 23 Perform F	ull Labor	ratury	Qcon	Samp	le P5500025	2		201		
Possible Hazard le	dentification: <sup>24</sup> ammable 🗐 Skin Irri		son B	Unknown		Sample Disposal: 2 Return to Client	5	by Lab Archive	2 (mos.)		
Turnaround Time Normal A Rush			QC I.	Level: 27	7	Project Specific (spe		CLP Data Par			
1. Relinquished by (Signature/Affiliation)	28 J	Corp Time			1. Recei (Signature/A	ved by 28		Date: Time:			
2. Relinquished by (Signature/Affiliation)	7	Date	9:	Zin inom	2. Recei	ved by ffiliation)		Date:_ Time:			
3. Relinquished by (Signature/Affiliation)	8 -	Date Time	9:		3. Recei	ved by		Date: Time:			
Comments: 29						ν.			0		
1X Gross All	B 5M 7110 / Ba	Cr- TPAL	1010 Tr	ritium	EERI	-H·01		w   3			



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PROJE	ECT	NC	0.7	64	044

#### SAMPLE COLLECTION LOG

PROJECT NAME SHOPE MUDPIT	CHARACTERIZATION	
SAMPLE NO P55 000 22		
SAMPLE LOCATION DP - 15	(BACKGROUND LOCA	TIEN)
SAMPLE TYPE SOIL - SHALLON	CONTAINERS	AMOUNT
COMPOSITE YESNO	USED	COLLECTED
COMPOSITE TYPE SPATIAL OF DP-15	8-02 AMBIR GLASS	8-02 Amos 50-8
DEPTH OF SAMPLE O-ZET	16-02 AMBLE GLAS-	16-02 Duesco
WEATHER PACTLY SWAY, TEMP YOFF		

COMMENTS: PREPARED BY: A Manie Welch



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#### SAMPLE COLLECTION LOG

PROJECT NAME SHORE MUPPIT	CHARACTERIZATION	<u> </u>
SAMPLE NO		10
SAMPLE LOCATION DP-15 (P	VPLICATE CF PSSOOD 22)	(BALKGROUND)
SAMPLE TYPE SOIL - SHALLOW	CONTAINERS	AMOUNT COLLECTED
COMPOSITE YESNO		COLLECTED
COMPOSITE TYPE SPATIAL OF DP-15	8-02 AMERGIAS	8-02
DEPTH OF SAMPLEO-ZFT	16-OLAMBIR GLASS	16-02
WEATHER PARTLY SUNDY TEMP YOUR BREEZY		

COMMENTS: SEE PAPE DATED 9/16/96 FOR GURTHER DETAILS.

SEE ATTRUMP MAP FOR LOCATION OF DP-15 SON BORINGS.

P5500023 MILL BE AMERICAN FOR GROSS OF BAT GUARDA SEE., B

AT GUARTERA, 5T. LOUIS P550023 15 A STANDING.

SAMPLE OF P550022 A SHOULD FOR GROSS OF BAT GUARTED

AT DP-15 NTH SEFICIANT NOLINE TO PLL SAMPLE TARS.

FOR P550022 AND P550023 THIS SON MAS COMPOSITED

ALLEGOIDE TO ITLN-SOF - OLOU AND PUT INTO SAMPLE TARS.

FIRE PERVIOUSLY MENTODOSAMPLES SON MAS COLUMNS.

THROUGH DIRECT PSH BRULLING METHOD. AFTER THE DRILLERS

COMESTER FURNING, THEY REMOVED THE SIX INCH STANDISS

STEEL SAMPLING THEY REMOVED THE SIX INCH STANDISS

STEEL SAMPLING THEY REMOVED THE SIX INCH STANDISS

CF BACH SUZIVE MERE COMES AT TO DESCRIBE THE OLUMNS.

OF SACH SUZIVE MERE COMES AT TO DESCRIBE THE SOLUTION.

DP-15. AFTUR THE SOLUMB CAPPED LATER THEY WERE COMPOSITED

ALCOXOMIS TO ITLN SOR OLOY. THEY WERE COMPOSITED

AND SAMPLE TARS. A RAD TELL SCANNED AND SWIPED THE EQUIRMENT.

AND SAMPLE TARS. A RAD TELL SCANNED AND SWIPED THE EQUIRMENT.

AND SAMPLE TARS. A RAD TELL SCANNED AND SWIPED THE EQUIRMENT.

AND SAMPLE TARS. A RAD TELL SCANNED AND SWIPED THE EQUIRMENT.

AND SAMPLE TARS. A RAD TELL SCANNED AND SWIPED THE EQUIRMENT.

PREPARED BY: Silling Wolch 9/16/9



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#### SAMPLE COLLECTION LOG

PROJECT NAME SHOAL MURPIT	CHARACTERIZATION	
SAMPLE NO \$550026		
SAMPLE LOCATION DP-16	LBACKGROWND LOCATION	)
SAMPLE TYPE SOIL - SHALLOW	CONTAINERS USED C	AMOUNT
COMPOSITE YESNO		OLLEGIED
COMPOSITE TYPE SPATIAL OF DP-16	8-02 AMBLE GLASS	8-02
DEPTH OF SAMPLEO-3 er	16-02 AMER GLASS	16-02
WEATHER PARTLY SUNNY TEMP YO'S BREEZY		

COMMENTS:	SEE	FADL	PATEO	9/14/	196 FOR	E FORTHS	ER DE-	TAILS.	
SEE ATT	actio 1	MAP FOR	L COCA	Tront 1	OF DE	0-16 50	AL BORI	165.	
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PREPARED BY: A Man Welcher 9/16/96



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#### SAMPLE COLLECTION LOG

PROJECT NAME SHOOL MUDPIT CH	DUACTERIZATION	
SAMPLE NO		_
SAMPLE LOCATIONDP-17	(BACKGROUND LOCATION	)
SAMPLE TYPE SHALLON NO	CONTAINERS AMO USED COLLE	
COMPOSITE TYPE SPATIAL OF DI-17	8-02 AMBILGLASS 8-	02
DEPTH OF SAMPLEO-3 =T.	16-02 AMERGLASS 16	30
WEATHER PARTLY SUNNY, TEMP 40'S		

	_		BK		-7		_				_			_	_					_	_						
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AP	CLA	_	TH	5	50	1_	WA	5	O٤	'ac	LIA	2.6	,	EL	CH	E	NO	W	<b>9</b> 5	4	SPP	TO.	7	HS	4	RSA	iai
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PREPARED BY: A- Main Welder 9/16/16

### APPENDIX B

# HOUSEKEEPING SITE CLOSURE VERIFICATION DOCUMENTATION

## FFACO CORRECTIVE ACTION SITE HOUSEKEEPING CLOSURE VERIFICATION FORM

Closure Verification Date: August 19, 1997

CAS Number: 57-98-01

General Location: Project Shoal Area

Latitude: 39° 11′ 56"

Longitude: 118° 22' 35"

CAU Number: 416

Elevation: 5198 ft

Northing: 4,338,653.629 (UTM)

Easting: 546,682.546 (UTM)

Coordinate/Elevation Data Obtained from Garmen 40 Global Position System: Accuracy is within 300 ft Horizontal - Vertical Varies with Locality

#### Site Access Route:

From US 50 turn south on SR 839 approximately 4.9 miles to corrals (on east side of road). Continue 0.1 mile on SR 839, turn west on dirt road and proceed approximately 3.9 miles. Site is approximately 120 feet to the south of the road.

Waste Item(s) Originally at Site	Apparent Waste Type*
Empty quart steel oil cans	Ordinary (Debris)

**CAS Status Prior To Cleanup** 

CAS Status After Cleanup

#### **Current Site Description/Observations:**

IT Corp. field staff identified approximately six oil cans at the site on March 12, 1996, BN Environmental Remediation (ER) staff verified that the oil cans (and approx. 14 more in the same general area) were still present

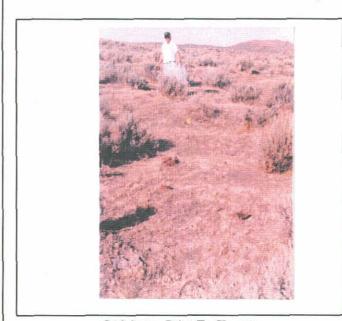
<sup>\*</sup> Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other

#### FFACO CORRECTIVE ACTION SITE HOUSEKEEPING CLOSURE VERIFICATION FORM

#### Current Site Description/Observations (continued):

on August 19, 1997. ER staff retrieved the cans on August 19, 1997 (approximately 20) for disposal at the solid waste landfill located at the Nevada Test Site.

#### ✓ No Further Action Required at Corrective Action Site



CAS Status Prior To Cleanup



CAS Status After Cleanup

Dave Madsen

Corrective Action Coordinator/Designee

(Signature)

:		
	DATE: 8-19-97 NO. A  Reynolds Electrical & Engineering Radiological Control Department-	5647 Co., Inc.
	<b>Material Cleara</b>	nce
	MONITOR: Mc Closke	y
	ORGANIZATION: BN RP SURVEY LOCATION: PROJECT	- (1) -1
	FROM: PROJECT SHOAL - FA	MON AL
	TO: NTS	10070
	☐ UNRESTRICTED ☐ OFF-SITE ☐ ON-SITE ☐ SALVAGE	
	□ EXCESS	
	THIS MATERIAL HAS BEEN SURVEYED FOR RADIOACTIVITY AND MEETS DOE STANDARDS FOR RELEASE TO PUBLIC USE	INITIAL
	□ CONTROLLED	
	DESCRIPTION:	
	BAG OF OLD PUSTY	
	PROSENT SHOPE ARE	om
	PROJECT SHOAL AREA	4
	VIC FAILON NV.	-
C	CAS 57-98-6	0/
	<u> </u>	
-		
-		-
-		
F -	EMARKS: EXP 8-29-9-	7
-		
¥	CU.S. GPO:1994-584-857	E-1581 (06/93)

### APPENDIX C

## WASTE DISPOSAL DOCUMENTATION

## AREA 6 HYDROCARBON LANDFILL ACCEPTANCE CHECKLIST

#### SOURCE OF MATERIAL

- a. Generator:
- b. Contact and phone #:
- c. Location:

BN Romedia	ation Projects
Dave Madsen	5-7all
Project Shoo	1 /near Fallon, NV
0	CAU 416

- d. Charge #:
- e. Organization code:
- f. Who will transport?:

C5CBIDE	В
E110	
RP	

#### PACKAGE WILL INCLUDE THE FOLLOWING ITEMS

- a. Characterization letter
- b. Analytical results
- c. Process knowledge
- d. Is the package complete?
- e. Basic description

Brady # BA	1-0001
YES	NO
	V V
1) Weste Pil	e, ~200 cu
2 louds x = 20	104-0110
a peads x - ac	09= 2400

	YES	N
		112 11
cie	2/29/47	

Brady #

NO

Brady #	
YES	NO

## SCHEDULE A DATE AND TIME FOR DISPOSAL

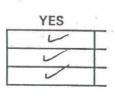
- a. Date scheduled:
- b. Start date:
- c. End date:

7-2-97	
~ 8-11-97	
8-26-97	

# 8/25/97 = 6 loudr x ~ 48,000 lbs. = 288,000# 8/26/97 = 6 loadr = 326,900#

#### AT THE LANDFILL, THE GENERATOR MUST HAVE

- a. Bill of Lading
- b. Rad certification
- c. Weight ticket



EST. 614,900#

#### COMPLETE PACKAGE

- a. Enter weight into database
- b. Enter into billing log

/ YES	NO
8/29/97	

Signature/Date

re/Date: (ala Jan Jan 18-29-97

		22
DATE: 8/25/97 NO. A 5791		DATE: 8/26/9 NO. A 5792
Reynolds Electrical & Engineering Co., Inc. Radiological Control Department-Ramatrol		Reynolds Electrical & Engineering Co., Inc. Radiological Control Department-Ramatrol
Material Clearance		Material Clearance
MONITOR: McCloskey		MONITOR: McClosley
ORGANIZATION: BN RP		ORGANIZATION: BN RP
SURVEY LOCATION: PROJECT SHOOL		SURVEY LOCATION: SHOAL MUDPIT
FROM: PROJECT SHOAL	i	FROM: PIZUTELT SHOAL SITE
TO: NTS		TO: NTS
<b>⊠UNRESTRICTED</b>		X)UNRESTRICTED
☑ OFF-SITE □ ON-SITE		Ø OFF-SITE
□ SALVAGE		☐ ON-SITE ☐ SALVAGE
□ EXCESS		□ EXCESS
THIS MATERIAL HAS BEEN SURVEYED FOR INITIAL		THIS MATERIAL HAS BEEN SURVEYED FOR INITIAL
RADIOACTIVITY AND MEETS DOE		RADIOACTIVITY AND MEETS DOE
STANDARDS FOR RELEASE TO PUBLIC USE		STANDARDS FOR RELEASE TO PUBLIC USE
		USE
CONTROLLED	1	☐ CONTROLLED
DESCRIPTION:		DESCRIPTION: HYDROCARBON
HYPROCARSON importer		(Petroleum) Impactel Soil
Colin Error property		From Project Speal Mud
SHOPL - PAILON NV.		17t - C/40416
		BN Tracking # BN 0087
CAU 416		- pin present
		8 LOADS PLUS
Waste Tracking # BN 0087		1 LOAD Sump lines for
<del></del>		disposal @ AZ3 land Fill
6 loads of 801		-and re-use for U6712
-	The state of	1 am liver to be
		mansported under
		6 cun Tay # A5793 en 8/27/97
- 2 2 2 2		
REMARKS: Exp, 9-20-97		REMARKS: Exp 9-20-97
19 NA . 19	342	-
		<b>☆U.S. GPO:1994_584.857</b> RE-1581 (06/93)

STATE OF NEVADA NO. 681	77
PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHT AND MEASURE This is to certify, That the following - described merchandise was weighed by a Public	in a
Weighmaster as prescribed by the Public Weighmaster Law, NRS, Chapter 582 87340 LB 8120A 8-25-97	
GROSS	
TAPLE CUSTOMERS NAME R ( Y.) C VC. ( )	
METADDRESS	
COMMODITY TO THE CALL SOLL	
EQUIPMENT NO. TRUCK LICE	NSE NO.
SMEDLEY'S	
1755 RENO MIGHWAY PHONE (702) 423 5500 TRAILER LICENSE NO. DRIVER ON DRIVER OFF	
ORIVER ()	
SMEDLEY'S	
SHIPPER: 10-10 114	
RECEIVER DV + C+ + 51CH+	
J.H. SMITTEN - OWNER	
1557/28620	
ADAMS BURBHESS FORMS 9013 (3-PART FORM)	8 #
INIFORM STRAIGHT BILL OF LADING Original—Not Negotiable—Domestic	_
Ship	per's #
	it's No.
	1 11:
18/25 19 97 from SHOAL SITE (30 4)	CAU 416
*at	E of Follow UV
*at	E of Follow UV  If the content is reasons are private a confusion in management  - reason or and destination is in manage agreed as to each carrie ment by the content private or wellest known contents, valueing
*at	(E of Fallow NV)
*** at	E of Follow NV  I meaning any property compared in processing any property of compared in a processing any property of compared in the compare
The state of the s	The of Follow NV  I me of the state of the s
The state of the s	The of Fallow NV  I me of the control of the contro
Consigned to BECHTIEL NEVADA (FOR THE /// U)  Destination NEVADA TEST SITE (NTS)  State of NV Zip Code  Delivering Mail or Street address of Vehicle	The off Follow NV  I have control to reading the broad or coffee and in production of the control to read on the control to th
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Agent, Per\_

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PUBLIC WEIGHMASTER'S CERTIFICATE OF This is to certify, That the following - described many	WEIGHT AND MEASURE	No.	68176	,
Weighmaster as prescribed by the Public Weighn 8-760 LB 8:17A 8-25-97	naster Law, NRS, Chapter 582	07	700	(4)
TARECUSTOM	DATE DI MC VI	2/2	Jan T	
NET	ACONESS	un		- 1
0	MOON Contaminat	ed zoi	F UNITS	-
SMEDLEY'S	EQUIPMENT NO.	TRU	CK LICENSE NO.	
1755 RENO HIGHWAY PHONE (702) 423 5500 FALLON, NEVADA 89406	TRAILER LICENSE NO.	DRIVE		
	Bear		0	
SHIPPER: Belchle	PUBLIC	MEDLEY'S WEIGHMAST	ER	
RECEIVER DIV Test Sight	Sandy	BA	aun	2
AND THE RESERVE OF THE PARTY OF		ITTEN - OWN	ER	4 5
954557/28620		,		
S ADAMS BURNESS FORMS 9013 (3-PART FORM)		80		
UNIFORM STRAIGHT BILL OF LADING Original—Not Ne	gotiable—Domestic	Shipp	or's #	
RECEIVED, subject to the classifications and tanifs in effect on the date of the issue of this Bill of Lading.	Carrier	Agent	's No.	
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.  at	, CAL	Agent ) 4/C SE of A		
0/- 07	, CAL	) 416		or corporation in prosocousin for options to to cash corner in Novem demands, estating
at	SHOAL SITE (30m);  SHOAL SITE (30m);	) 416 SE of 1		ort, Review demanded, evaluating
at	SHOAL SIZE (30m); as from below, should be desirately fill and servery law on the servery law of the servery	SE of A section of the control of th	Fe/Lo 1 , A/D that control and an incurrency any provision that to each development if it is made and by their, solution general as serve	notification only.)
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	VEIGHT AND MEASUR Bridise was weighed by a ster Law, NRS, Chapter	Public 582  S/G 7  NO. OF TRUCK	LICENSE NO.
RECEIVER: NUTTEST Sight	Sand	SMEDLEY'S UBLIC WEIGHMASTEI  DEPUTY H. SMITTEN - OWNEI	wn
ADAMS SUSSMESS PORMS 9013 (3-PART FORM)  UNIFORM STRAIGHT BILL OF LADING Original—Not Ne  RECEIVED, subspect to the classifications and tarries in effect on the date of the issue of this Bill of Lading,  8/25 19 97 from.  If you consider your for consolid failure, in repower goes over, to de send on any of the distingue, of the consolid pages to any to de send on any of the distingue, of any of the consolid pages to any to de send on any of the distingue, of the distinguish of the distinguis	Carrie	Shipp  CAU — 4  D Mi SE of  d amounts bong uniterated throughout from to dathor a service care on one on solution to all the service care on one on solution to all the service care on one	FELLOW, MV ) The Similar is instanced in the similar in procession in procession in the similar
Consigned to BECHTEL NELSON (FOR DOES)  Destination Nevada Test Site Sta	(NV)	Zip Code	County of
- Del	ivering Mc Vane	Vehicle	nitial No
Collect On Delivery \$ and remit to:			C. D. D. charge Shipper Consignee
No. Packages Description of Articles. Special Merks, and Exceptions	CityCity	State  Class Check Column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statements:
hydrocer to does not exact 1600 my kg =			The carrier shall not make delivery of this shipment without payment of freight and all other lewful charges.  (Signeture of Consignor.)  If charges are to be precisid, write or stemp here. "TO BE PREPAID."
BNO 087 Em Line College State	fort		Piscelved \$ to apply to prepayment of the charges on the property described hereon.  Agent or Cashier  Par the signature here acknowledges only
"If the showest reports between two parts by a corner by west, the line requires that the bit of loans shall state whether it is no walks, shopers are required to state specifically in writing the agreed or declared value of the property.  The agreed or declared value of the preparty to heavily specifically stated by the shipper to be not exceeding	contains or shapper's weight. NOTE-	Where the rote is dependent	the amount Prepaid ) Charges Advanced
/	per		3

STATE OF NEVAD		
PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHMASTER'S CERTIFICATE OF WEIGHMASTER'S CERTIFICATE OF Weighmaster as prescribed by the Public Weighmaster as prescribed by the	/EIGHT AND MEASURE	58199 "200,
87920 LB 6:56A 8-26-97 GROSS TAGE CUSTOMERS	DATE	" asc
NET 5200 COMM	-3011	
SMEDLEY'S  1755 RENO HIGHWAY PHONE (702) 423 5500  FALLON: NEVADA 89406	TRAILER LICENSE NO. DRIVER	
SHIPPER Balchde Test Sta	SMEDLEY'S PUBLIC WEIGHMASTE	ER
RECEIVER MINORE TO STATE OF THE PROPERTY OF TH	J.H. SMITTEN - OWN	ER
954557/28620		-,
DADAGE BUSINESS FORMS  UNIFORM STRAIGHT BILL. OF LADING Original—Not Ne	gotiable—Demostia	-
SAIL OF IN STEAM OF EADING ORIGINAL—NOT HE	Shipp	er's #
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bit of Lading.	CAU 416	's No.
at 8/26 19 97 from	SHOOL SITE (30 MI SE	of Fallon, NV)
of int or any set and preserve over all or any parties on each sucky to department and as basic party, at any time elements of its or any time observed of its or any of and property. Due on the Constitute of th	While the street address of consent	gnee-For purposes of notification only.)
Consigned to BECHTEL NEUADA (FOR DOE/NU	) (man or sheat address or const	griee-ror purposes or normalism only.)
Destination NEUADA TEST SITE State	te of Zip Code	County of NYE
	vering McVane Vehicle or Car II	nitialNo
Collect On Delivery \$ and remit to:		C. O. O. charge Shipper I Consignee
Street	City State	Subject to Section 7 of conditions, if this shipment is to be delivered to the
No Parkayes Description of Articles, Special Marks, and Exceptions	(Sub. to Cor.) Class Check (Sub. to Cor.) or Rate Column	consignee without recourse on the con- signor, the consignor shall sign the tol- lowing statements:
1 ~20 yel3 load of petroleum hydrosolo	4	The carrier shall not make delivery of this slepment without payment of freight and all other lawful charges
soil (does not exceel 1600 mg/kg TPH)	The Later Comments of the Comm	(Signature of Consignor)
For disposal at Area 6 NTS Hydro-	4, 5	If charges are to be prepaid write or startip here, "TO BE PREPAID."
Carbon Land Fill - BN Tracking # BNOCE	37	Received \$
LOAD#7 ENLO	evel	Agent or Cashier  Per(line signature here sicknowledges only the amount Prepaid )
"If the showers recover between two ports by a currer by wieter the time requires that the bill of lading shall stalls whether it is "out value, shappers are required to stall aspectically in writing the agreed or declared value of the property."	arrier's or shipper's weight." NOTE-Where the rate is dependent	Charges Advanced
The agreed or declared value of the property is bereity securically stated by this shaper to be not exceeding	per	l
Shipper, Per	P.L. mellon	Agent, Perluy
Permanent post-office address of shipper.	7	goni, reing

	The same		
STATE OF NEVADA		Free St	
PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHT A	ND MEASURE NO	6820	0
This is to certify, That the following - described marchandise was Weighmaster as prescribed by the Public Weighmaster Law, N	weighed by a Public	700	
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TARE CUSTOMERS NAME B	elahele		
NET 620091 ADDRESS	laninatial		
COMMODITY S	oil	NO. OF UNITS	
SMEDLEY'S	EQUIPMENT NO.	O.33	•
1735 RENO HIGHWAY PHONE 17021 423 5500 FALLON, NEVADA 89406	1.7	RIVER ON	
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P/4557/28620	J.H. SMITTEN	-OWNER	The same
ADAMS BUSINESS FORMS 9013 (3-PART FORM)		. 2	
UNIFORM STRAIGHT BILL OF LADING Original—Not No	egotiable—Domes	stic	e we w
x - ž		Snipp	
F.C.E.V.E.D. subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.	Carrier	CAU 416	's No.
at	S HOAL SITE	(30mi SE	THE FEB / STA NU )
Consigned to BECHTEL NEUADA (FOR DOE/N	(Mail or s	street address of consid	nee-For purposes of notification only.
Destination NEUADA TEST SITE St	ate of <u>NV</u> Zi	n Code	County of NYE
De	livering McUANE	Vehicle	Dec 10 5939
Collect On Delivery	irrier_///C/#IVE		C. O. D. charge / Shipper
and remit to:			
Chanal	N.		to be paid by Consignee  Subject to Section 7 of conditions of
Street	City	State	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the con-
No Description of Articles, Special Marks, and Exceptions		State Class Check or Rate Column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee without recourse on the consigneer. The consigner shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of regist
1 - 20 yel 3 load of patroleum hydrocarbon		A STATE OF THE PARTY OF THE PAR	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignite without recourse on the consignite without recourse on the consignor, the consignor shall sign the following statements:
1 - 20 yel 3 load of petroleum hydrocarbon 301 (does not exceel 1600 mg/kg TPH)		A STATE OF THE PARTY OF THE PAR	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consupers without recourse on the consupors, the consignor shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  (Signature of Consignor)
Description of Articles, Special Marks, and Exceptions  1 - ZOyd3 load of patroleum hydrocarbon  soil (does not exceed 1600 mg/kg TPH)  for olisposal art NTS Area 6 Hydrocarbon		A STATE OF THE PARTY OF THE PAR	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consupers without recourse on the consupor, the consignor shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
1 - 20 yel 3 load of petroleum hydrocarbon 301 (does not exceel 1600 mg/kg TPH)		A STATE OF THE PARTY OF THE PAR	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee without recourse on the consignee, the consignee without payment and all other lawful charges.  (Signature of Consignor )  If charges are to be prepaid, write or slamp hore. "TO BE PREPAID."
Description of Articles, Special Marks, and Exceptions  1 - ZOyd3 load of patroleum hydrocarbon  soil (does not exceed 1600 mg/kg TPH)  for olisposal art NTS Area 6 Hydrocarbon		A STATE OF THE PARTY OF THE PAR	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee without recourse on the consignee. The consignee shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  (Signature of Consignor)  If charges are to be orepaid, write or slamp how, "TO BE PREPAID,"
Description of Articles, Special Marks, and Exceptions  1 - 20yd 3 load of petroleum hydrocarbon  soil (does not exceel 1600 mg/kg TPH)  for olisposal at NTS Area 6 Hydrocarbon  Land 511 - BN Tracking # BN-0087		A STATE OF THE PARTY OF THE PAR	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee without recourse on the consignee without recourse on the consignee. The consigner shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  (Signature of Consignor.)  If charges are to be orepaid, write or sharp from. "TO BE PREPAID."  Received \$
Description of Articles. Special Marks and Exceptions  1 - 20yd 3 load of petroleum hydrocarbon  3011 (does not exceel 1600 mg/kg TPH)  - for disposal at NTS Area 6 Hydrocarbon  Land 5,11 - BN Tracking # BN-0087	(Sub to Cor)	Class Check or Rate Column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee without recourse on the consignee without recourse on the consignee. The consignee shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  (Signature of Consignor)  If charges are to be prepaid, write or slained hore. "TO BE PREPAID."  Received \$
Description of Articles. Special Marks, and Exceptions  1 ~ 20yd 3 load of petroleum hydrocarbon  soil (does not exceel 1600 mg/kg TPH)  for olisposal at NTS Area 6 Hydrocarbon  Land 511 - BN Treeling # BN-0087  Load # B  1 no support inches between two poins by a carrier by wear the line required that the bit of loang shall also whether a a		Class Check or Rate Column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee without recourse on the consignee without recourse on the consignee. The consignee shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  (Signature of Consignor)  If charges are to be orepaid, write or slaine horn. "TO BE PREPAID."  Received \$
Description of Articles. Special Marks and Exceptions  1 - 20yd 3 load of petroleum hydrocarbon  soil (does not exceel 1600 mg/kg TPH)  for disposal at NTS Area 6 Hydrocarbon  Land 511 - BN Tracking # BN-0087	(Sub to Cor)	Class Check or Rate Column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consigner without recourse on the consigner. The consigner without recourse on the consigner. The consigner shall sign the following statements:  The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  (Signature of Consignor)  If charges are to be orepoad, write or slained him. "TO BE PREPAID."  Received \$

This is to certify, That the following - described by the Publisher as prescribed by the Publ	F NEVADA  ICATE OF WEIGHT AND MEASURE ribed marchandise was weighed by a Public ic Weighmaster Law, NRS, Chapter 582  RO. 68198  FEE 7 92  CRAM
95880 LB 6:49A 8-25-97 GROSS 31980 TARE (03.900)	CUSTOMERS NAME BOICHTIG
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1755 RENO MIGHWAY PHONE (702) 423 5500 FALLON, NEVADA 89406	TRAILER LICENSE NO. DRIVER ON DRIVER OFF
Belchtle RECEIVER: Veuada Test Sit	PUBLIC WEIGHMASTER
RECRIVER: NEVOCIA (EST ST	DEPUTY  J.H. SMITTEN - OWNER
054557/28620	J.H. SMILLER VWNER
ADAMS SUSDICES FORMS SO13 (3-PART FORM)	
	LTANKE LAST SIN
UNIFORM STRAIGHT BILL OF LADING Origin	nal—Not Negotiable—Domestic
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue	Carrier Agent's No.
at 8/76-10	040916
The preparty described before to exposers good veter, execut so need sources and equations of described in described in the preparty senter the comments agreed to dearly to so stand place of delivery at and delevations, of do so yet recognitions, water	997 from SHOAL STE (SO M) SE of Te /bo, NU )
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Destination NEVADA TEST SITE	State of NU Zip Code County of NYE  Delivering Nc Unit Vehicle  Carrier No Car Initial No.
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Postination NEUADA TEST STE  Routing Collect On Delivery  \$ and remit to:	State of NU Zip Code County of NYE  Delivering Vehicle Carrier Vehicle or Car Initial No.    C. D. D. charge   Shipper
Destination	State of NU Zip Code County of NYE  Delivering Vehicle or Car Initial No.    C. D. D. charge to be paid by Carsignes
Routing  Collect On Delivery  \$ and remit to:  Street  Packages  Description of Articles, Special Marks, and Exceptions  1 220 yd 3 lead of petrokum hydr	State of
Routing  Collect On Delivery  \$ and remit to:  Street  Packages  Description of Articles, Special Merks, and Exceptions  1 220yd3 lead of petrokum hydro	State of Zip Code County of Vehicle
Destination NEUROA TEST STE  Routing  Collect On Delivery  \$ and remit to:  Street  Packages Description of Articles, Special Marks, and Exceptions  1 220 yd 3 load of petrokum hydr  3011 (does not exceel 1600 mg/kg TP)  disposal at MS Area 6 Hydroc	State of
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Destination NEUROA TEST STE  Routing Collect On Delivery  \$ and remit to:  Street Street  Parkages Description of Articles, Special Marks, and Exceptions  1 220 yd 3 lead of patrokam hydro  3011 (does not exceed 1680 mg/kg TPA  disposal at NTS Area 6 Hydroco  Landfill BN Tredway # BNOC	State of
Routing  Collect On Delivery  \$ and remit to:  Street  Parkages Description of Articles, Special Marks, and Exceptions    20yd3 lead of petrokum hydro  3011 (does not exceed 1600 mg/kg TP)  disposal at MTS Area 6 Hydroco  Londfill BN Tredway & BNOC	State of

\_Agent, Per\_

PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHMASTER'S CERTIFICATE OF WEIGHT This is to certify, That the following - described marchandi Weighmaster as prescribed by the Public Weighmaster	GHT AND MEASURE	1401	68201 "700 Carh
TARE 4900 LB 7:11A 8-26-97 CUSTOMERS NAMED ADDRESS NAMED A		97	
SMEDLEY'S  1755 RENO HIGHWAY PHONE (702) 423 5500  FALLON. NEVADA 89406		DRIVE	R DW
RECEIVER A) La Tout Site	er 200 111	SMEDLEY'S IC WEIGHMASTI DEPUTY SMITTEN - OWN	1.4
J. 1557/28620  S. ADAMS BUSINESS FORMS 9013 (3-MART FORM)  UNIFORM STRAIGHT BILL OF LADING Original—Not Ne	egotiable—Dome	estic s	Shipper's #
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For disposal at NTS Area 6 Hydrocarbon		9.	(Signature of Consignor)  If charges are to be prepaid, write or stamp here, "TO BE PREPAID."
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vivide shappers are required to state appoints in wrange the aproad or declared value of the property     ine upraced or declared value of the property to horning     (i.e. declary stated by the otherwise to be net according.)	DOM 7/50 5		ا د
Shipper, Per Jawa	TARRE		Agent, Per

PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIG	HT AND MEASURE	■ No. 68	203
This is to certify, That the following - described marchandis  Weighmaster as prescribed by the Public Weighmaster L	e was weighed by a Pul	PEE	a a a
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COMMACCITY	EQUIPMENT NO.	TRUCK LIC	
SMEDLEY'S		(	0
1733 REND HIGHWAY PHONE (702) 423 5500 FALLON: NEVADA 89406	DRWER LICENSE NO.	DRIVER OFF	
RECEIVER Newada Test Site	BY ENENIO	SMEDLEY'S IC WEIGHMASTER DEPUY SMITTEN - OWNER	
ADAMS BUSINESS FORMS 90 13 (3-PART FORM)  JNIFORM STRAIGHT BILL OF LADING Original—Not Ne RECEIVED, subject to the classifications and tentits in effect on the date of this Bill of Ledwing.	egotiable—Dom Carrie	Ships	ser's «
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Del	ivering McUb	17-11	
collect On Delivery and remit to:		or oar i	C. O. D. charge   Shipper
	0"		Subject to Section 7 of conditions of this shipment is to be delivered to the
No. STREET. No. Description of Articles, Special Merks, and Exceptions	(Sub. to Cor.)	Class Check or Rate Column	consignee without recourse on the con- signor, the consignor shall sign the fol- towing statements:
1 220 yd 2 load of petroleum hydrocarbon	Harris of the state	Carrier Land	The carrier shall not make delivery of the stigment without payment of treight and all other lawful charges.
Soil (does not excell : 1600 my 1kg TPN)		- III	(Signature of Consignor.)
For dispose at NTS Area 6 My bocarbon			If charges are to be prepaid, write or stamp here, "TO BE PREPAID."
(and Fill - BN Fracting # BN 0087		Avenue	Received \$
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PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHMAST	GHT AND MEASURE ise was weighed by a P Law, NRS, Chapter 58	ublic 2	NO. OF UN	COAL STEEL S
MARIE RB Transit	PUI	SMEDLE BLIC WEIGH	MASTER	
RECEIVER Newada Test Site	N Inene	u f	ya	1
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* 0,	Carrie	er	5.00.73	t's No.
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No. Pirkages Description of Articles, Special Marks, and Exceptions	Weight (Sub to Cor.)	Class or Rate	State	this shipment is to be delivered to the consignee without recourse on the con- signor, the consignor shall sign the fol-
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he showest moves between two ports by a correct by value, the law requires that the bill of balling shall state whether it is "co- 	errer's or draper's weight." HOTE-	Where the rese	te dependent	Charges Advanced:
the agreed of american value of the property to benety technology stated by the shapey to be not assessing	per		-	s
Shipper, Per		2	-	Agent, Per
rm.inent post-office address of shipper,				

(This 88 of Lading is to be signed by the shipper and agent of the carrier issuing same.)

Bill of Lading

### APPENDIX D

# LABORATORY ANALYTICAL RESULTS MUD PIT VERIFICATION SAMPLES

Reno - Las Vegas Phoenix - Burbank Reno Division 1030 Matley Lane • Reno, Nevada 89502 (702) 348-2522 • Fax: (702) 348-2546 1-800-368-5221

CLIENT:

International Technology Corporation

4330 S. Valley View #114 Las Vegas, Nevada 89103 ATTN: Kurt Schmidt

PROJECT NAME: Project Shoal PROJECT NUMBER: 771060.07.03 PURCHASE ORDER: 081597BC NEL ID: R9708050-01/09

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/19/97, and analyzed as received.

Where applicable we have included the following quality control data; a method blank, used to document contamination resulting from the analytical process, a Laboratory Control Spike (LCS), used to document laboratory performance, and Surrogates, organic compounds which are similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

Surrogate results were determined following a new calibration curve on 8/23/97. TPH results were not effected.

Should you have any questions or comments, please feel free to connect our Client Services department (702) 348-2522.

Ellen M. Ferguson
Laboratory Manager

Re-usines 8/26/97

CLIENT: International Technology Corporation

PROJECT NAME:Project Shoal PROJECT NUMBER: 771060.07.03

ANALYST:RA

METHOD:

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY EPA 8015M,

September 1994

SAMPLE MATRIX: SOIL

CLIENT ID	DATE SAMPLED	NEL ID	RESULTS mg/kg	REPORTING LIMIT	Surrogate Recovery	EXTRACTED	ANALYZED
PSA-V01	8/19/97	R9708050-01 C <sub>10-24</sub> >C <sub>24</sub>	21 53	15 mg/kg 15 mg/kg	104%	8/20/97	8/22/97
PSA-V02	8/19/97	R9708050-02 C 10-24 >C 24	ND ND	15 mg/kg 15 mg/kg	79%	8/20/97	8/22/97
PSA-V03	8/19/97	R9708050-03 C <sub>10-24</sub> >C <sub>24</sub>	62 120	15 mg/kg 15 mg/kg	115%	8/20/97	8/21/97

**OUALITY CONTROL DATA (Total for Diesel Range):** 

Sample ID	Result	Acceptable Range	Surrogate Recovery	Acceptable Range
Method Blank, 082097-E2-BLK	ND	< 15 mg/kg	92%	65-135%
LCS, 082097-E2-LCS	85%	65-135%	107%	65-135%
MS, R9708050-06 MS	76%	65-135%	107%	65-135%
MSD, R9708050-06 MSD	79%	65-135%	105%%	65-135%

ND - Not Detected

<sup>\*</sup>Surrogate used was n-triacontane, acceptance limits 65-135%.

CLIENT: International Technology Corporation

PROJECT NAME:Project Shoal PROJECT NUMBER: 771060.07.03

ANALYST-RA

METHOD: TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY EPA 8015M,

September 1994

SAMPLE MATRIX: SOIL

CLIENT ID	DATE SAMPLED	NEL ID	RESULTS mg/kg	REPORTING LIMIT	Surrogate Recovery	EXTRACTED	ANALYZED
PSA-V04	8/19/97	R9708050-04 C <sub>10-24</sub> >C <sub>24</sub>	38 130	15 mg/kg 15 mg/kg	91%	8/20/97	8/21/97
PSA-V05	8/19/97	R9708050-05 C <sub>10-24</sub> >C <sub>24</sub>	44 170	15 mg/kg 15 mg/kg	119%	8/20/97	8/21/97
PSA-V06	8/19/97	R9708050-06 C 10-24 >C 24	51 130	15 mg/kg 15 mg/kg	108%	8/20/97	8/22/97
PSA-V06	8/19/97	R9708050-06 DUP C 10-24 >C 24	47 120	15 mg/kg 15 mg/kg	97%	8/20/97	8/22/97

OUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery	Acceptable Range
Method Blank, 082097-E2-BLK	ND	< 15 mg/kg	92%	65-135%
LCS, 082097-E2-LCS	85%	65-135%	107%	65-135%
MS, R9708050-06 MS	76%	65-135%	107%	65-135%
MSD, R9708050-06 MSD	79%	65-135%	105%	65-135%

ND - Not Detected

<sup>&</sup>quot;Surrogate used was n-triacontane, acceptance limits 65-135%.

CLIENT: International Technology Corporation

PROJECT NAME:Project Shoal PROJECT NUMBER: 771060.07.03

ANALYST:RA

METHOD:

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY EPA 8015M.

September 1994

SAMPLE MATRIX: SOIL

	DATE		RESULTS	REPORTING	Surrogate		
CLIENT ID	SAMPLED	NEL ID	mg/kg	LIMIT	Recovery	EXTRACTED	ANALYZED
PSA-V07	8/19/97	R9708050-07 C <sub>10-24</sub> >C <sub>24</sub>	33 92	15 mg/kg 15 mg/kg	115%	8/20/97	8/22/97
PSA-V08	8/19/97	R9708050-08 C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	76%	8/20/97	8/22/97
PSA-V09	8/19/97	R9708050-09 C 18-24 >C 24	<b>4</b> 8 110	15 mg/kg 15 mg/kg	109%	8/20/97	8/22/97

OUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery	Acceptable Range
Method Blank, 082097-E2-BLK	ND	< 15 mg/kg	92%	65-135%
LCS, 082097-E2-LCS	85%	65-135%	107%	65-135%
MS, R9708050-06 MS	76%	65-135%	107%	65-135%
MSD, R9708050-06 MSD	79%	65-135%	105%	65-135%

ND - Not Detected

<sup>\*</sup>Surrogate used was n-triacontane, acceptance limits 65-135%.

INTERNAT TECHNOLO CORPORA		SHOW CH	ANALYS AIN OF (	IS REC	DY RE	AND CORD*	Ref Pag	ference Documer ge 1 of	nt No. 522355
Project Name/	No. 177/060.	07.03 Sam	ples Shipm	ent Date	18-1	5-97	Bill t	0:5 TT CORPORATION	. N
Sample Team Memb	ers 2 B CHERR	Υ	Lab De	estination	BUEUM	A ENVIRON		4330 S. UMU	C4 VIBN #114
Profit Center	No. 336637/0		اما	Conten	9715	E For	1	LAS VEGNS, A	
Project Mana	ager 4 Rick Da	ESWLER Pro	ject Contac	t/Phone	1251/L	HERSH !	702 1700	0:10 KURT SCHMILL	
Purchase Order	No. 608/59	780	Carrier/W	aybill No	13 uh		Heport to	FAX 702-7941-	1794
Required Report D	Date 119-/9-97			1 40 41		PER L	INIE	50 1	
Sample 14	Sample 15	Date/Time 1							.00
Number	Description/Type	Collected	Type	Volume	eervative	1 to day	rogram	Condition on <sup>21</sup> Receipt	Disposal <sup>22</sup> Record No.
P5A-VO1	SOIL - DRY	1155	802	802	TOE/	10U 2U	8015-M	R9708050-0	27
PSA- VO2	1	8-19-97	GIAL			LI-TOT BY	00/8 /	Ran Da	
2		8-19-97	CAIMEL					2015	MIY
PSA. VW3		8-19-9)		$\vdash$				K9717050-0	3
PSA-VO4		126						R9708050.	04
DSA-VOS		1220						R9 74800	1
	LINE RELETED	8-19-97							
PSA-VOS	Poc	8-19-97		F			18	C WOE C	
PSA- YO6		12 25		1605				1897080500	) ja
PSA-V07		8-19-17	1	802	1	1	<i>Y</i>	K9708050-0	לדט
Special Instruction	ns: 23 MS/A	ISO FROM	DCA-V	26			2-3-18-17	hart.	/
Possible Hazard I	dentification: 24	-	ison B 📮	Unknow	n Q	Sample D Return to C	isposal: <sup>25</sup> Client Disp	osal by Lab Archi	ve (mos.)
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(Signature/Affiliation)	ace	ZT CORD, Tin	18: 1045	4	(Signature/A	Willetion)	erlynder	Time	
2. Relinquished by Date: 2. Received by (Signature/Affiliation) Time: Date: Time:									
3. Relinquished by (Signature/Affiliation)		Da Tin	10:		3. Recei	(ffilletion)		Date Time	
Comments: 29	Ax Results	70 K.	SCHILLOR	. @	DZ -7	794-1791	Custody Seal Inte	ct? Y N None	emo. 8°C

FACA SYLE/91



## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)\*

Reference Document No.30 522355
Page 2 of 2

Project Name Project Syrac

Project No. 77/060 0703 0000

Samples Shipment Date 8-19-97

			ONE	CONT	AINER	PER LINE	* ·	
Sample <sup>14</sup> Number	Sample 15 Description/Type	Date/Time 16 Collected	Тура	Volume	aervative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
SA-VOR	Sove - DRY	8-19-97 1235 8-19-97	CIR Glass	802	ICA Cool	TPH & 805-M	K9708050	
SA-V09	Soll DRY	1243	1	1	1	1	RGFOR	LAB
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		3					FOR	LAD
		Xa.					USE	LAB
							OJL	DIME
•							FOR	LAB
							USE	DIVLY
							FOR	LAD
							FOR USE	SAIL
	11/					X x.	USE	JINE
	MYa			-11			FOR	LAB
	19							DIVLY
	1/6							II #0 IPP0
	1					2		LAB
	/						USE	DNLY
/							FOR	LAB
	+			1			USE	
	-							
*	-							

Reno - Las Vegas Phoenix • Burbank Reno Division 1030 Matley Lane • Reno, Nevada 89502 (702) 348-2522 • Fax: (702) 348-2546 1-800-368-5221

CLIENT:

International Technology Corporation

4330 S. Valley View #114 Las Vegas, Nevada 89103 ATIN: Kurt Schmidt

PROJECT NAME: Project Shoal PROJECT NUMBER: 771060.07.03 PURCHASE ORDER: 081597BC NEL ID: R9708065-01/05

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/25/97, and analyzed as received.

Where applicable we have included the following quality control data; a method blank, used to document contamination resulting from the analytical process, a Laboratory Control Spike (LCS), used to document laboratory performance, and Surrogates, organic compounds which are similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

Should you have any questions or comments, please feel free to contact our Client Services department (702) 348-2522.

Eileen M. Ferguson Laboratory Manager 8/28/97 Date

CLIENT: International Technology Corporation

PROJECT NAME:Project Shoal PROJECT NUMBER: 771060.07.03

ANALYST:RA

METHOD: TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY EPA 8015M, September

1994

SAMPLE MATRIX: SOIL

CLIENT ID	DATE SAMPLED	NEL ID	RESULTS mg/kg	REPORTING LIMIT	Surrogate Recovery	EXTRACTE D	ANALYZED
PSA-V10	8/25/97	R9708065-01 C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	97%	8/26/97	8/26/97
PSA-V11	8/25/97	R9708065-02 C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	103%	8/26/97	8/26/97
PSA-V12	8/25/97	R9708065-03 C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	96%	8/26/97	8/26/97
PSA-V12 Duplicate	8/25/97	R9708065-03D C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	102%	8/26/97	8/26/97
PSA-V13	8/25/97	R9708065-04 C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	98% .	8/26/97	8/26/97
PSA-V14	8/25/97	R9708065-05 C <sub>10-24</sub> >C <sub>24</sub>	ND ND	15 mg/kg 15 mg/kg	97%	8/26/97	8/26/97

<sup>&</sup>lt;sup>a</sup> Surrogate used was n-triacontane, acceptance limits 65-135%.

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery	Acceptable Range
Method Blank, 082697-E1-BLK	ND	< 15 mg/kg	88%	65-135%
LCS, 082697-B1-LCS	83%	65-135%	81%	65-135%
MS, R9708065-03 MS	81%	65-135%	96%	65-135%
MSD, R9708065-03 MSD	81%	65-135%	92%	65-135%

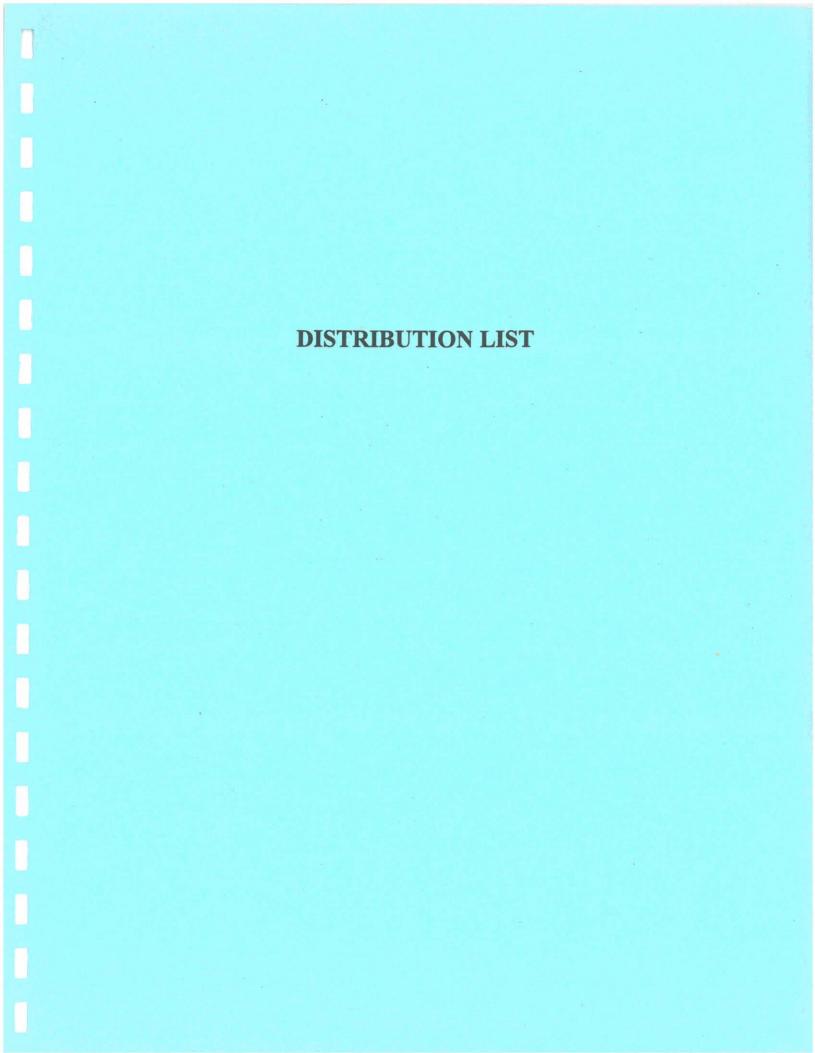
ND - Not Detected

INTERNATIONAL TECHNOLOGY CORPORATION 7	7060,0 hez,
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# ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD\*

Refer	er	nce	Doc	ıment	No.	5	2	2	3	5	3
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P5A-V10	5014	1510	CHAPS THE	802	ICE/	TPH 64,80	15 M		297080	, 18
P5A-V11	SOLL	1500	✓	702				FOR	10000	6502
P-SA-V12.	5016	8/25/77	2080Z	1602				USE	1297080	5-02
P3A-V13	SOIL	8/25/17	16 80%	802					R97080	65-04
P5A-414	5014	1520	1	802	V	V			R97080	
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